

Waste Tank Summary Report for Month Ending February 28, 2001

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

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Hanford Group, Inc.

Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

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ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 667128

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ECN

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ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)

667128

16. Design Verification Required

☐ Yes

☒ No

17. Cost Impact

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CONSTRUCTION

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18. Schedule Impact (days)

Improvement ☐ _____

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19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
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Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>	Tickler File	<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

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Cog. Mgr. N. W. Kirch N.W. Kirch 3/21/01

QA _____

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ADDITIONAL

Waste Tank Summary Report for Month Ending February 28, 2001

B. M. Hanlon
CH2M HILL Hanford Group, Inc.

Date Published
February 2001

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

P. O. Box 1500
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Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-89RL14047

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Page 1

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WASTE TANK SUMMARY REPORT FOR MONTH ENDING FEBRUARY 28, 2001

Change Control Record

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WASTE TANK SUMMARY REPORT FOR MONTH ENDING FEBRUARY 28, 2001

BM HANLON

CH2M HILL Hanford Group, Inc.

Richland, WA 99352

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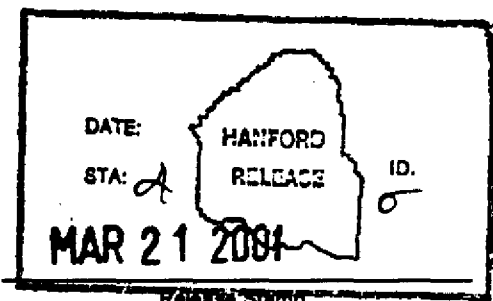
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Waste Tank Summary Report

B. M. Hanlon

ABSTRACT

- (i) *This report is the official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. This report provides data on each of the existing 177 large underground waste storage tanks and 63 smaller miscellaneous underground storage tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U. S. Department of Energy-Richland Operations Office Order 435.1 (DOE-RL, July 1999, Radioactive Waste Management, U. S. Department of Energy-Richland Operations Office, Richland, Washington) requiring the reporting of waste inventories and space utilization for Hanford Tank Farm tanks.*

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METRIC CONVERSION CHART		
1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 gallon	=	3.80 liters
1 ton	=	0.90 metric tons
$^{\circ}\text{F} = \left(\frac{9}{5} ^{\circ}\text{C} \right) + 32$		
1 Btu/h = 2.930711 E-01 watts (International Table)		

WASTE TANK SUMMARY REPORT For Month Ending February 28, 2001

Note: Changes from the previous month are in bold print.

I. WASTE TANK STATUS

Category	Quantity	Date of Last Change
Double-Shell Tanks ^b	28 double-shell	10/86
Single-Shell Tanks	149 single-shell	1966
Assumed Leaker Tanks	67 single-shell	07/93
Sound Tanks	28 double-shell	1986
	82 single-shell	07/93
Interim Stabilized Tanks ^a	126 single-shell	02/01
Not Interim Stabilized ^a	23 single-shell	02/01
Intrusion Prevention Completed	108 single-shell	09/96
Controlled, Clean, and Stable ^f	36 single-shell	09/96
Watch List Tanks ^d	19 single-shell	09/00 ^e
	5 double-shell	01/00
Total	24 tanks	

^a Of the 126 tanks classified as Interim Stabilized, 65 are listed as Assumed Leakers. (See Table G-1)

^b Five double-shell tanks (SY-101 was removed from the list in January 2001) are currently included on the Hydrogen Watch List and are thus prohibited from receiving waste in accordance with "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510.

^c Two of these tanks are Assumed Leakers (BY-105, BY-106). (See Table F-1)

^d See Appendix D for more information on Watch List Tanks.

^e Dates for the Watch List tanks are "officially added to or removed from the Watch List" dates. Eighteen tanks were removed from the Organic Watch List in December 1998; the last two tanks (C-102 and C-103) were removed from the Organic Watch List in August 2000. In December 1999, tank C-106 was removed from the High Heat Load Watch List. Only the Hydrogen Watch List remains.

^f The TY tank farm was officially declared Controlled, Clean, and Stable (CCS) in March 1996. The TX tank farm and BX tank farms were declared CCS in September 1996.

II. WASTE TANK INVESTIGATIONS

This section includes all single- or double-shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases, or drywell radiation level increases in excess of established criteria.

A. Assumed Leakers or Assumed Re-leakers: (See Appendix H for definition of "Re-leaker")

This section includes all single- or double-shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued, or for which a waste tank investigation is in progress, for assumed leaks or re-leaks. Tanks/catch tanks will remain on this list until either a) completion of Interim Stabilization, b) the updated occurrence report indicates that the tank/catch tank is not an assumed leaker, or c) the investigation is completed.

There are no formal leak investigations in progress. There are no tanks for which an off-normal or unusual occurrence report has been issued for assumed leaks or re-leaks.

B. Tanks with increases indicating possible intrusions:

This section includes all single-shell tanks and related receiver tanks for which the surveillance data show that the surface level or ILL has met or exceeded the increase criteria, or are still being investigated.

Candidate Intrusion List: Increase criteria in the following tanks indicate possible intrusions.

Tank 241-B-202
Tank 241-BX-101
Tank 241-BX-103
Tank 241-BY-103

The surveillance data was last reviewed on the tanks listed as having probable liquid intrusions: Memo 74B20-99-045, dated November 22, 1999.

Catch Tank 241-AX-152: The liquid level in this catch tank was steady around 66.75 inches from the startup of Project W-030, "Tank Farm Ventilation System," in March 1998 until late August 1998. The level then began to decrease. The October 1998 reading of 65 inches is 1.75 inches below the summer average. This is an active catch tank, routinely pumped, and deviations from baseline are not applicable per OSD-00031. The decrease represents a significant change in trend and it is apparent that tank conditions changed around the end of August 1998.

Resolution Status: Discrepancy Report #98-853 was issued on November 4, 1998. One possible cause under investigation is a change in flow path, causing an increase in evaporation. The tank was pumped down to 2.25 inches on November 13, 1998. Since that time the level has decreased to 0.00 inches. The Discrepancy Report will remain open until an engineering investigation is complete.

The discrepancy remained unresolved, and there was a renewed interest in this tank because of its importance for deactivation of the 702A ventilation system to prepare it for Decommissioning and Deactivation and for collection of drainage from AX-155. In the absence of an agreement on a leak test, management requested a leak assessment. The leak assessment team met April 20, 2000, to review the data. Observations inconsistent

with a conclusion that the catch tank was leaking and scanty data prompted the leak assessment team to defer a decision pending availability of additional data - primarily tank temperature and a more sensitive level measuring device to shorten the necessary leak test time. A Leak Test Recommendation was issued May 8, 2000. The leak test involves adding water to the tank and measuring the level drop, to support tank integrity assessment. The addition of AX-152 integrity pressure test water to AY-101 is being re-evaluated because the actual volume of water to be added to the DST system is considerably more than the volume originally evaluated. The increased volume is necessary because of the siphon type pump in the catch tank.

Leak assessment is currently being performed per Work Package 2E-00-193. Water was added in August 2000 which raised the level to 10.75 inches. The level was 8.50 inches on February 28, 2001.

Work Package 2E-00-194 is on the schedule to fill the catch tank to 80% capacity (approximately 108 inches) and perform a 40-hour leak test.

Because the ENRAF will not be installed, Work Package ES-99-00133 has been revised to allow flammable gas sampling through the existing manual tape.

III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

1. Single-Shell Tank Interim Stabilization

Tank 241-S-106 was Interim Stabilized on February 1, 2001. Total Waste: 455.3 Kgal; Supernate: none; DIL and DLR: 28.1 Kgal; PLR: 18.2 Kgal; Saltcake: 455.3 Kgal; no Sludge. Total Pumped: 203.6 Kgal, including waste pumped during previous campaigns.

2. Single-Shell Tanks Saltwell Jet Pumping (See Table A-6 footnotes for further information)

Tank 241-A-101 - Pumping began May 6, 2000. No pumping since August 2000; a total of 14.1 Kgallons has been pumped from this tank since start of pumping in May 2000.

Tank 241-AX-101 - Pumping began July 29, 2000. No pumping since August 2000; a total of 8.3 Kgallons has been pumped from this tank since start of pumping in July 2000.

Tank 241-S-102 - Pumping problems forced many shutdowns. The pump was replaced and pumping resumed on February 19, 2000. Problems with the new pump forced a shutdown on March 23, 2000. Pumping was interrupted in early June 2000; due to the flushing involved in trying to return to pumping, June pumping resulted in a net addition to the tank. No pumping since June 2000; a total of 56.8 Kgallons has been pumped from this tank since start of pumping in March 1999.

Tank 241-S-109 - Pumping began September 23, 2000. The pumping rate dropped below 0.05 GPM and the pump was shut down on January 27, 2001. The tank is now being evaluated to determine if it can be Interim Stabilized. A total of 145.2 Kgallons has been pumped from this tank (111.0 Kgallons were pumped in 1979 [primary stabilization], and partial isolation in 1982).

Tank 241-SX-101 - Pumping began November 22, 2000. In December 2000, a total of 6.9 Kgallons was pumped; a total of 19.2 Kgallons has been pumped from this tank. The pump failed on December 9, 2000. No pumping since December 2000.

Tank 241-SX-103 - Pumping began October 26, 2000. In February 2001, a total of 6.0 Kgallons was pumped; a total of 110.0 Kgallons has been pumped from this tank since start of pumping in October 2000.

Tank 241-SX-105 - Pumping began August 8, 2000. In February 2001, a total 1.8 Kgallons was pumped; a total of 151.1 Kgallons has been pumped since start of pumping in August 2000.

Tank 241-U-102 - Pumping began January 20, 2000. No pumping in February 2001; a total of 74.0 Kgallons has been pumped from this tank since start of pumping in January 2000.

Tank 241-U-105 - Pumping began December 10, 1999, and was discontinued July 13, 2000, because of a pump failure. Waste levels are being allowed to stabilize, so waste porosities and final waste volumes can then be calculated to determine whether this tank meets Interim Stabilization criteria.

Tank 241-U-106 - Pumping began August 24, 2000. In December 2000, a total of 0.7 Kgallons was pumped; a total of 39.1 Kgallons has been pumped from this tank since start of pumping in August 2000. Pumping rate has fallen below 0.05 GPM. The pump failed on December 29, 2000. The tank is currently in observation mode to determine eligibility for interim stabilization.

Tank 241-U-109 - Pumping began March 11, 2000. In December 2000, a total of 0.6 Kgallons was pumped; a total of 65.9 Kgallons has been pumped from this tank since start of pumping in March 2000. Jet pump failure occurred on December 4, 2000. Attempts to restart the pump have been unsuccessful. The tank is currently under observation mode to determine eligibility for interim stabilization with major equipment failure.

3. RP-CHG-TANKFARM-2001-0004. Occurrence Report. "Corrosion Observed in DST Tank 241-AY-101 During Video Inspection of the Annulus Section." Off-Normal Occurrence. Notification Date: January 31, 2001.

Corrosion of the primary and secondary liners of DST AY-101 was observed during video inspections of the tank annulus region in 1999 and 2000. Follow-up video inspections that were completed on January 29, 2001, show more extensive corrosion in localized regions of the

primary and secondary liners when viewed from the annulus region. There are no visual or radiological indications of waste leakage from the tank.

An operational restriction has been imposed to limit the waste level in this tank to less than 80 inches until further evaluation can be performed.

4. RP-CHG-TANKEARM-2001-0006, Occurrence Report, "Flammable Gas Level Exceeds Lower Flammability Limit (LFL) at 241-C-101 Riser 1," Off-Normal Occurrence, Updated: February 9, 2001.

While performing the required initial flammable gas monitoring at C-101 Riser 1, the flammable gas level was found to be greater than 25% LFL. A grab sample taken when was opened will be analyzed for additional information. The riser was immediately secured in a safe condition. This work activity was in preparation for installation of a buoyancy type (ENRAF) tank liquid level measuring device.

All work was stopped per the work instruction. Additional flammable gas monitoring samples taken at the C-101 Breather Filer and Manual Tape access points indicated 0% LFL. A grab sample was taken for additional analysis. The riser was then secured in a safe condition. Entry restrictions were put in place.

The processes to obtain the results of the gas sampling analysis is continuing.

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APPENDIX A
MONTHLY SUMMARY

TABLE A-1. MONTHLY SUMMARY

TANK STATUS

February 28, 2001

	200 EAST AREA	200 WEST AREA	TOTAL
IN SERVICE	25	03	28 (1)
OUT OF SERVICE	66	83	149
SOUND	59	51	110
ASSUMED LEAKER	32	35	67
INTERIM STABILIZED	60	66	126
ISOLATED			
PARTIAL INTERIM	11	30	41
INTRUSION PREVENTION COMPLETE	55	53	108
CONTROLLED, CLEAN, AND STABLE	12	24	36

WASTE VOLUMES (Kgallons)						
	200 EAST AREA	200 WEST AREA	TOTAL	SST TANKS	DST TANKS	TOTAL
SUPERNATANT						
AW Aging waste	1763	0	1763	0	1763	1763
CC Complexant concentrate waste	3170	1263	4433	0	4433	4433
CP Concentrated phosphate waste	1088	0	1088	0	1088	1088
DC Dilute complexed waste	1715	831	2546	1	2545	2546
DN Dilute non-complexed waste	1656	0	1656	0	1656	1656
PD PUREX/TRUsolids	316	0	316	0	316	316
NCPLX Non-complexed waste	164	149	313	313	0	313
DSSF Double-shell slurry feed	6031	168	6199	1049	5150	6199
TOTAL SUPERNATANT	15903	2411	18314	1363	16951	18314
SOLIDS						
Sludge (includes liquids)	6459	5648	12107	11059	1048	12107
Saltcake (includes liquids)	8106	15910	24016	20808	3208	24016
TOTAL SOLIDS	14565	21558	36123	31867	4256	36123
TOTAL WASTE	30468	23969	54437	33230	21207	54437
AVAILABLE SPACE IN TANKS	9283	806	10089	0	10089	10089
DRAINABLE INTERSTITIAL LIQUID (2)	1425	2026	3451	3451	(2)	3451
DRAINABLE LIQUID REMAINING (2)	2472	2342	4814	3906	(2)	3906

(1) Includes five double-shell tanks on Hydrogen Watch List not currently allowed to receive waste, AN-103, AN-104, AN-105, AW-101, and SY-103. SY-101 was removed from the Hydrogen Watch List in January 2001 and will return to service later in the year.

(2) Drainable Interstitial Liquid and Drainable Liquid Remaining for single-shell tanks only; not applicable for double-shell tanks

HNF-EP-0182, Rev. 155

TABLE A-2. TANK USE SUMMARY

February 28, 2001

TANK FARMS	TANKS AVAILABLE TO RECEIVE WASTE TRANSFERS	SOUND	ASSUMED LEAKER	ISOLATED TANKS			
				PARTIAL INTERIM ISOLATED	INTRUSION PREVENTION COMPLETED	CONTROLLED CLEAN, AND STABLE	INTERIM STABILIZED TANKS
EAST							
A	0	3	3	2	4	0	5
AN	7 (1)	7	0	0	0	0	0
AP	8	8	0	0	0	0	0
AW	6 (1)	6	0	0	0	0	0
AX	0	2	2	1	3	0	3
AY	2	2	0	0	0	0	0
AZ	2	2	0	0	0	0	0
B	0	6	10	0	16	0	16
BX	0	7	5	0	12	12	12
BY	0	7	5	5	7	0	10
C	0	9	7	3	13	0	14
Total	25	59	32	11	55	12	80
WEST							
S	0	11	1	10	2	0	6
SX	0	5	10	6	9	0	11
SY	3 (1)	3	0	0	0	0	0
T	0	9	7	5	11	0	16
TX	0	10	8	0	18	18	18
TY	0	1	5	0	6	6	6
U	0	12	4	9	7	0	9
Total	3	51	35	30	53	24	66
TOTAL	28	110	67	41	108	36	126

(1) Five Double-Shell Tanks on the Hydrogen Watch List are not currently receiving waste transfers (AN-103, 104, 105, AW-101, and SY-103).

SY-101 was removed from the Hydrogen Watch List in January 2001 and will return to service later in the year.

TABLE A-3. PUMPING RECORD, LIQUID STATUS AND PUMPABLE
LIQUID REMAINING IN TANK FARMS

February 28, 2001

TANK FARMS	Waste Volumes (Kgallons)						
	PUMPED THIS MONTH	PUMPED FY TO DATE	CUMULATIVE TOTAL PUMPED 1979 TO DATE	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL REMAINING	DRAINABLE LIQUID REMAINING	PUMPABLE SST LIQUID REMAINING
EAST							
A	0.0	0.0	164.6	503	161	665	622
AN	N/A	N/A	N/A	3745	N/A	N/A	N/A
AP	N/A	N/A	N/A	6279	N/A	N/A	N/A
AW	N/A	N/A	N/A	2489	N/A	N/A	N/A
AX	0.0	0.0	21.3	378	105	483	447
AY	N/A	N/A	N/A	581	N/A	N/A	N/A
AZ	N/A	N/A	N/A	1763	N/A	N/A	N/A
B	0.0	0.0	0.0	15	262	277	203
BX	N/A	0.0	200.2	24	127	N/A	N/A
BY	0.0	0.0	1567.8	0	581	581	498
C	0.0	0.0	103.0	126	189	315	207
Total	0.0	0.0	2066.9	15903	1425	2321	1977
WEST							
S	0.0	21.7	1075.1	76	636	712	578
SX	7.8	201.5	659.1	134	326	460	387
SY	N/A	N/A	N/A	2094	N/A	N/A	N/A
T	0.0	0.0	245.7	29	218	246	168
TX	N/A	0.0	1205.7	9	297	N/A	N/A
TY	N/A	0.0	29.9	0	53	N/A	N/A
U	0.0	31.3	365.4	69	496	565	483
Total	7.8	254.5	3580.9	2411	2026	1983	1816
TOTAL	7.8	254.5	5637.8	18314	3451	4304	3593

N/A = Not applicable for Double-Shell Tank Farms, and Single-Shell Tank Farms which have been declared Controlled, Clean and Stable (BX, TX, TY).

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TABLE A-4. INVENTORY SUMMARY BY TANK FARM

February 28, 2001

SUPERNATANT LIQUID VOLUMES (Kgallo)												SOLIDS VOLUME		
TANK FARM	TOTAL WASTE	AVAIL SPACE	AW	CC	CP	DC	DN PD	NCPLX	DSSE	TOTAL	SLUDGE	SALT CAKE	TOTAL	
EAST														
A	1479	0	0	0	0	0	0	0	0	503	503	574	402	976
AN	5489	2487	0	1780	0	0	224	0	0	1741	3745	0	1748	1748
AP	6368	2752	0	1390	1088	1805	37	0	0	2159	6279	0	89	89
AW	3982	2858	0	0	0	0	923	318	0	1250	2489	571	922	1493
AX	826	0	0	0	0	0	0	0	0	378	378	26	422	448
AY	830	1130	0	0	0	109	472	0	0	0	581	249	0	249
AZ	1920	56	1763	0	0	0	0	0	0	0	1763	157	0	157
B	1909	0	0	0	0	0	0	0	15	0	15	1211	683	1894
BX	1490	0	0	0	0	0	0	0	24	0	24	1259	207	1466
BY	4387	0	0	0	0	0	0	0	0	0	0	754	3633	4387
C	1784	0	0	0	0	1	0	0	125	0	126	1658	0	1658
Total	30484	8283	1763	3170	1088	1715	1856	318	184	8041	15903	6488	8106	14585
WEST														
S	5056	0	0	0	0	0	0	0	75	1	76	1184	3796	4980
SX	3734	0	0	0	0	0	0	0	0	134	134	927	2673	3800
SY	2614	806	0	1263	0	831	0	0	0	0	2094	71	449	520
T	1877	0	0	0	0	0	0	0	29	0	29	1703	145	1848
TX	6810	0	0	0	0	0	0	0	9	0	9	697	6104	6801
TY	639	0	0	0	0	0	0	0	0	0	0	529	110	639
U	3239	0	0	0	0	0	0	0	36	33	69	537	2633	3170
Total	23869	806	0	1263	0	831	0	0	149	168	2413	5848	15910	21558
TOTAL	54453	10089	1763	4433	1088	2546	1856	318	313	8199	18314	12107	24016	36123

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TABLE A-5. INVENTORY AND STATUS BY TANK - DOUBLE-SHELL TANKS

February 28, 2001

TANK STATUS							SOLIDS VOLUME					PHOTOS/VIDEOS		SEE FOOTNOTE FOR THESE CHANGES	
TANK	WASTE MATL	TANK STATUS	TANK USE	EQUIVA- LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL. SPACE (1) (Kgal)	SUPER- NATANT LIQUID (Kgal)	SLUDGE	LIQUID	SALTCAKE	LIQUID	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO		LAST IN-TANK VIDEO
								(includes liquid) (Kgal)	(15% porosity) (Kgal)	(includes liquid) (Kgal)	(25% porosity) (Kgal)				
AN TANK FARM STATUS															
AN-101	DN	SOUND	DRCVR	81.5	224	916	224	0	0	0	0	06/30/99			
AN-102	CC	SOUND	CWHT	383.6	1055	85	966	0	0	89	22	06/30/99			
AN-103	DSS	SOUND	CWHT	347.6	956	184	499	0	0	457	114	06/30/99	10/29/87		
AN-104	DSSF	SOUND	CWHT	382.5	1052	88	603	0	0	449	112	06/30/99	08/19/88		
AN-105	DSSF	SOUND	CWHT	410.2	1128	12	639	0	0	489	122	06/30/99	01/26/88		
AN-106	CC	SOUND	CWHT	13.8	38	1102	21	0	0	17	4	06/30/99			
AN-107	CC	SOUND	CWHT	378.2	1040	100	793	0	0	247	62	06/30/99	09/01/88		
7 DOUBLE-SHELL TANKS				TOTALS	5493	2487	3745	0	0	1748	436				
AP TANK FARM STATUS															
AP-101	DSSF	SOUND	DRCVR	406.1	1114	26	1114	0	0	0	0	06/01/89			
AP-102	CP	SOUND	DRCVR	395.6	1088	52	1088	0	0	0	0	07/11/89			
AP-103	CC	SOUND	DRCVR	102.5	282	858	282	0	0	0	0	05/31/96			
AP-104	CC	SOUND	DRCVR	402.9	1108	32	1108	0	0	0	0	10/13/88			
AP-105	DSSF	SOUND	CWHT	412.4	1134	6	1045	0	0	89	22	06/30/99		09/27/95	
AP-106	DC	SOUND	DRCVR	226.2	622	516	622	0	0	0	0	10/13/88			
AP-107	DC	SOUND	DRCVR	357.5	983	157	983	0	0	0	0	10/13/88			
AP-108	DN	SOUND	DRCVR	13.5	37	1103	37	0	0	0	0	10/13/88			
8 DOUBLE-SHELL TANKS				TOTALS	6368	2752	6279	0	0	89	22				
AW TANK FARM STATUS															
AW-101	DSSF	SOUND	CWHT	409.5	1126	14	751	0	0	375	94	10/31/00	03/17/88		
AW-102	DN	SOUND	EVFD	315.6	868	272	838	0	0	30	8	01/31/01	02/02/83		
AW-103	PD	SOUND	DRCVR	184.7	508	632	145	316	79	47	12	06/30/99			
AW-104	DN	SOUND	DRCVR	114.9	316	824	85	0	0	231	58	06/30/99	02/02/83		
AW-105	PD	SOUND	DRCVR	154.9	426	714	171	255	38	0	0	06/30/99			
AW-106	DSSF	SOUND	SRCVR	268.4	738	402	499	0	0	239	60	06/30/99	02/02/83		
6 DOUBLE-SHELL TANKS				TOTALS	3982	2858	2489	571	117	922	232				

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TABLE A-5. INVENTORY AND STATUS BY TANK - DOUBLE-SHELL TANKS

February 28, 2001

TANK STATUS												PHOTOS/VIDEOS		SEE	
				EQUIVA- LENT	AVAIL. TOTAL	SPACE (1)	SUPER- NATANT	SLUDGE (includes liquid)	LIQUID (15% porosity)	SALTCAKE (includes liquid)	LIQUID (25% porosity)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	FOOTNOTE FOR THESE CHANGES
TANK	WASTE MATL	TANK STATUS	TANK USE	INCHES	WASTE (Kgal)	WASTE (Kgal)	LIQUID (Kgal)	LIQUID (Kgal)	LIQUID (Kgal)	LIQUID (Kgal)	LIQUID (Kgal)				
<u>AY TANK FARM STATUS</u>															
AY-101	DC	SOUND	DRCVR	67.3	186	796	109	78	11	0	0	06/30/99	12/28/82		
AY-102	DN	SOUND	DRCVR	234.5	645	336	472	173	28	0	0	10/31/00	04/28/81		
2 DOUBLE-SHELL TANKS				TOTALS	830	1130	581	249	39	0	0				
<u>AZ TANK FARM STATUS</u>															
AZ-101	AW	SOUND	CWHT	336.0	924	56	872	52	8	0	0	06/30/99	06/18/83		
AZ-102	AW	SOUND	DRCVR	362.2	996	0	891	105	16	0	0	06/30/99	10/24/84		
2 DOUBLE-SHELL TANKS				TOTALS	1920	56	1763	157	24	0	0				
<u>SY TANK FARM STATUS</u>															
SY-101	CC	SOUND	CWHT	352.7	970	170	887	0	0	63	21	06/30/99	04/12/89		
SY-102	DC	SOUND	DRCVR	328.0	902	238	831	71	11	0	0	06/30/99	04/29/81		
SY-103	CC	SOUND	CWHT	269.8	742	398	376	0	0	366	82	06/30/99	10/01/85		
3 DOUBLE-SHELL TANKS				TOTALS	2614	806	2084	71	11	449	113				
GRAND TOTAL					21207	10089	18951	1048	181	3208	803				

Note: +/- 1 Kgal differences are the result of computer rounding

Available Space Calculations Used in this Document		
Tank Farms	(Most Conservative)	
AN, AP, AW, SY	1,140,000 gal (414.5 in.)	1,140 Kgal
AY, AZ (Aging Waste)	980,000 gal (358.4 in.)	980 Kgal

NOTE: Supernate + Sludge (includes liquid) + Saltcake (includes liquid) = Total Waste

(1) Available Space volumes include restricted space, - see Appendix C tables for allocation of these restrictions.

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		PHOTOS/VIDEOS		SEE FOOTNOTES FOR THESE CHANGES	
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATE LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SALT		SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO		LAST IN-TANK VIDEO
											SLUDGE (Kgal)	CAKE (Kgal)				
A TANK FARM STATUS																
A-101	DSSF	SOUND	/PI	877	494	95	0.0	14.1	590	574	3	380	08/30/99	08/21/85	(g)	
A-102	DSSF	SOUND	IS/PI	41	4	8	0.0	39.5	12	4	15	22	07/27/89	07/20/89		
A-103	DSSF	ASMD LKR	IS/IP	371	5	45	0.0	111.0	50	43	366	0	06/03/88	12/28/88		
A-104	NCPLX	ASMD LKR	IS/IP	28	0	4	0.0	0.0	4	0	28	0	01/27/78	06/25/86		
A-105	NCPLX	ASMD LKR	IS/IP	37	0	0	0.0	0.0	0	0	37	0	10/31/00	08/20/86		
A-106	CP	SOUND	IS/IP	125	0	9	0.0	0.0	9	1	125	0	09/07/82	08/19/86		
6 SINGLE-SHELL TANKS				TOTALS	1478	503	161	0.0	164.6	665	622	574	402			
AX TANK FARM STATUS																
AX-101	DSSF	SOUND	/PI	676	378	74	0.0	8.3	452	436	3	295	09/30/99	08/18/87	(h)	
AX-102	CC	ASMD LKR	IS/IP	30	0	7	0.0	13.0	7	0	7	23	06/30/99	06/05/89		
AX-103	CC	SOUND	IS/IP	112	0	23	0.0	0.0	23	11	8	104	06/30/99	06/13/87		
AX-104	NCPLX	ASMD LKR	IS/IP	8	0	1	0.0	0.0	1	0	8	0	06/30/99	08/18/87		
4 SINGLE-SHELL TANKS				TOTALS:	826	378	105	0.0	21.3	483	447	26	422			
B TANK FARM STATUS																
B-101	NCPLX	ASMD LKR	IS/IP	113	0	24	0.0	0.0	24	17	0	113	06/30/99	05/19/83		
B-102	NCPLX	SOUND	IS/IP	32	4	7	0.0	0.0	11	4	0	28	06/30/99	08/22/85		
B-103	NCPLX	ASMD LKR	IS/IP	59	0	11	0.0	0.0	11	3	0	59	06/30/99	10/13/88		
B-104	NCPLX	SOUND	IS/IP	371	1	45	0.0	0.0	46	42	309	61	06/30/99	10/13/88		
B-105	NCPLX	ASMD LKR	IS/IP	158	0	20	0.0	0.0	20	16	28	130	06/30/99	05/19/88		
B-106	NCPLX	SOUND	IS/IP	117	1	25	0.0	0.0	26	19	0	116	02/29/00	02/28/85		
B-107	NCPLX	ASMD LKR	IS/IP	165	1	22	0.0	0.0	23	19	93	71	06/30/99	02/28/85		
B-108	NCPLX	SOUND	IS/IP	94	0	15	0.0	0.0	15	11	53	41	06/30/99	05/10/85		
B-109	NCPLX	SOUND	IS/IP	127	0	21	0.0	0.0	21	17	63	64	06/30/99	04/02/85		
B-110	NCPLX	ASMD LKR	IS/IP	246	1	27	0.0	0.0	28	20	245	0	02/28/85	03/17/88		
B-111	NCPLX	ASMD LKR	IS/IP	237	1	23	0.0	0.0	24	28	236	0	06/28/85	06/28/85		
B-112	NCPLX	ASMD LKR	IS/IP	33	3	4	0.0	0.0	7	3	30	0	05/31/85	05/29/85		
B-201	NCPLX	ASMD LKR	IS/IP	29	1	4	0.0	0.0	5	1	28	0	04/28/82	11/12/88 06/23/95		
B-202	NCPLX	SOUND	IS/IP	27	0	4	0.0	0.0	4	0	27	0	05/31/85	05/29/85 06/15/95		
B-203	NCPLX	ASMD LKR	IS/IP	51	1	5	0.0	0.0	6	1	50	0	05/31/84	11/13/86		
B-204	NCPLX	ASMD LKR	IS/IP	50	1	5	0.0	0.0	6	1	49	0	05/31/84	10/22/87		
18 SINGLE-SHELL TANKS				TOTALS	1909	15	282	0.0	0.0	277	203	1211	683			

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		PHOTOS/VIDEOS		SEE FOOTNOTES FOR THESE CHANGES	
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATE (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO		LAST IN-TANK VIDEO
BX TANK FARM STATUS																
BX-101	NCPLX	ASMD LKR	IS/IP/CCS	43	1	4	0.0	0.0	5	1	42	0	04/28/82	11/24/88	11/10/84	
BX-102	NCPLX	ASMD LKR	IS/IP/CCS	96	0	0	0.0	0.0	0	0	96	0	04/28/82	09/18/86		
BX-103	NCPLX	SOUND	IS/IP/CCS	71	9	4	0.0	0.0	13	9	62	0	11/29/83	10/31/86	10/27/84	
BX-104	NCPLX	SOUND	IS/IP/CCS	93	3	4	0.0	17.4	7	3	90	0	02/29/00	09/21/89		
BX-105	NCPLX	SOUND	IS/IP/CCS	51	5	4	0.0	15.0	9	5	46	0	06/30/99	10/23/86		
BX-106	NCPLX	SOUND	IS/IP/CCS	38	0	4	0.0	14.0	4	0	38	0	08/01/95	05/19/88	07/17/95	
BX-107	NCPLX	SOUND	IS/IP/CCS	345	1	36	0.0	23.1	37	33	344	0	09/18/90	09/11/90		
BX-108	NCPLX	ASMD LKR	IS/IP/CCS	26	0	4	0.0	0.0	4	0	26	0	07/31/79	05/05/84		
BX-109	NCPLX	SOUND	IS/IP/CCS	193	0	25	0.0	8.2	25	20	193	0	09/17/90	09/11/90		
BX-110	NCPLX	ASMD LKR	IS/IP/CCS	207	3	28	0.0	1.5	31	26	133	71	06/30/99	07/15/94	10/13/94	
BX-111	NCPLX	ASMD LKR	IS/IP/CCS	162	1	5	0.0	118.9	6	2	25	136	06/30/99	05/19/94	02/28/95	
BX-112	NCPLX	SOUND	IS/IP/CCS	165	1	9	0.0	4.1	10	7	164	0	09/17/90	09/11/90		
12 SINGLE-SHELL TANKS TOTALS:				1490	24	127	0.0	200.2	151	106	1259	207				
BY TANK FARM STATUS																
BY-101	NCPLX	SOUND	IS/IP	387	0	28	0.0	35.8	28	24	109	278	05/30/84	09/19/89		
BY-102	NCPLX	SOUND	IS/PI	277	0	40	0.0	159.0	40	33	0	277	05/01/95	09/11/87	04/11/95	
BY-103	NCPLX	ASMD LKR	IS/PI	400	0	58	0.0	95.9	58	53	9	391	06/30/99	09/07/89	02/24/97	
BY-104	NCPLX	SOUND	IS/IP	328	0	40	0.0	329.5	40	36	150	176	06/30/99	04/27/83		
BY-105	NCPLX	ASMD LKR	/PI	503	0	121	0.0	0.0	121	111	48	455	08/31/99	07/01/86		
BY-106	NCPLX	ASMD LKR	/PI	562	0	132	0.0	63.7	132	119	84	478	12/31/98	11/04/82		
BY-107	NCPLX	ASMD LKR	IS/IP	266	0	39	0.0	58.4	39	35	40	226	06/30/99	10/15/86		
BY-108	NCPLX	ASMD LKR	IS/IP	228	0	33	0.0	27.5	33	26	154	74	04/28/82	10/15/86		
BY-109	NCPLX	SOUND	IS/PI	290	0	31	0.0	167.1	31	26	57	233	07/08/87	06/18/87		
BY-110	NCPLX	SOUND	IS/IP	398	0	21	0.0	213.3	21	17	103	295	09/10/79	07/26/84		
BY-111	NCPLX	SOUND	IS/IP	459	0	14	0.0	313.2	14	6	0	459	06/30/99	10/31/86		
BY-112	NCPLX	SOUND	IS/IP	291	0	24	0.0	116.4	24	12	0	291	06/30/99	04/14/88		
12 SINGLE-SHELL TANKS TOTALS:				4387	0	581	0.0	1567.8	581	496	754	3633				

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		SEE FOOTNOTES			
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	FOR THESE CHANGES
C TANK FARM STATUS																
C-101	NCPLX	ASMD LKR	IS/IP	88	0	4	0.0	0.0	4	0	88	0	11/29/83	11/17/87		
C-102	DC	SOUND	IS/IP	316	0	62	0.0	46.7	62	55	316	0	09/30/95	05/18/76	08/24/95	
C-103	NCPLX	SOUND	/PI	198	79	18	0.0	0.0	97	83	119	0	12/31/98	07/28/87		
C-104	CC	SOUND	IS/IP	263	0	0	0.0	0.0	0	0	263	0	02/01/00	07/25/90		
C-105	NCPLX	SOUND	IS/PI	132	0	20	0.0	0.0	20	0	132	0	02/29/00	08/05/94	08/30/95	
C-106	NCPLX	SOUND	/PI	48	42	0	0.0	0.0	42	9	6	0	10/31/99	08/05/94	08/08/94	
C-107	DC	SOUND	IS/IP	257	0	30	0.0	40.8	30	25	257	0	06/30/99	00/00/00		
C-108	NCPLX	SOUND	IS/IP	66	0	4	0.0	0.0	4	0	66	0	02/24/84	12/05/74	11/17/94	
C-109	NCPLX	SOUND	IS/IP	66	4	4	0.0	0.0	8	4	62	0	11/29/83	01/30/76		
C-110	DC	ASMD LKR	IS/IP	178	1	37	0.0	15.5	38	30	177	0	06/14/95	08/12/86	05/23/95	
C-111	NCPLX	ASMD LKR	IS/IP	57	0	4	0.0	0.0	4	0	57	0	04/28/82	02/25/70	02/02/95	
C-112	NCPLX	SOUND	IS/IP	104	0	6	0.0	0.0	6	1	104	0	09/18/90	09/18/90		
C-201	NCPLX	ASMD LKR	IS/IP	2	0	0	0.0	0.0	0	0	2	0	03/31/82	12/02/86		
C-202	EMPTY	ASMD LKR	IS/IP	1	0	0	0.0	0.0	0	0	1	0	01/19/79	12/09/86		
C-203	NCPLX	ASMD LKR	IS/IP	5	0	0	0.0	0.0	0	0	5	0	04/28/82	12/09/86		
C-204	NCPLX	ASMD LKR	IS/IP	3	0	0	0.0	0.0	0	0	3	0	04/28/82	12/09/86		
16 SINGLE-SHELL TANKS TOTALS:				1784	128	189	0.0	103.0	315	207	1658	0				
S TANK FARM STATUS																
S-101	NCPLX	SOUND	/PI	427	12	83	0.0	0.0	95	80	211	204	12/31/98	03/18/86		
S-102	DSSF	SOUND	/PI	482	0	93	0.0	56.8	93	89	105	387	05/31/00	03/18/88		(c)
S-103	DSSF	SOUND	IS/PI	237	1	45	0.0	23.9	46	39	9	227	04/30/00	06/01/89	01/28/00	
S-104	NCPLX	ASMD LKR	IS/IP	294	1	34	0.0	0.0	35	31	293	0	12/20/84	12/12/84		
S-105	NCPLX	SOUND	IS/IP	456	0	42	0.0	114.3	42	33	2	454	09/26/88	04/12/89		
S-106	NCPLX	SOUND	IS/PI	455	0	26	0.0	203.6	26	2	0	455	02/28/01	03/17/89	01/28/00	(a)
S-107	NCPLX	SOUND	/PI	376	14	61	0.0	0.0	75	61	293	69	06/30/99	03/12/87		
S-108	NCPLX	SOUND	IS/PI	432	0	0	0.0	199.8	0	0	5	427	10/01/99	03/12/87	12/03/96	
S-109	NCPLX	SOUND	/PI	473	0	59	0.0	145.2	59	49	13	460	12/31/00	12/31/88		(j)
S-110	NCPLX	SOUND	IS/PI	390	0	30	0.0	203.1	30	27	131	259	05/14/92	03/12/87	12/11/96	
S-111	NCPLX	SOUND	/PI	501	48	82	0.0	3.3	130	97	116	337	09/30/99	08/10/89		
S-112	NCPLX	SOUND	/PI	523	0	61	0.0	125.1	61	70	6	517	12/31/98	03/24/87		
12 SINGLE-SHELL TANKS TOTALS:				5056	76	636	0.0	1075.1	712	578	1184	3796				

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME					SEE FOOTNOTES FOR THESE CHANGES
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATE (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	
SX TANK FARM STATUS																
SX-101	DC	SOUND	/PI	429	0	93	0.0	19.2	93	80	0	429	12/31/00	03/10/89		(i)
SX-102	DSSF	SOUND	/PI	514	134	95	0.0	0.0	229	216	0	380	04/30/00	01/07/88		
SX-103	NCPLX	SOUND	/PI	524	0	37	6.0	110.0	37	22	115	409	01/31/01	12/17/87		(k)
SX-104	DSSF	ASMD LKR	IS/PI	446	0	48	0.0	231.3	48	44	136	310	04/30/00	09/08/88	02/04/98	
SX-105	DSSF	SOUND	/PI	486	0	2	1.8	151.1	2	-10	65	421	-1/31/01	08/15/88		(f)
SX-106	NCPLX	SOUND	IS/PI	397	0	37	0.0	147.5	37	31	0	397	05/31/99	08/01/89		
SX-107	NCPLX	ASMD LKR	IS/IP	102	0	0	0.0	0.0	0	0	85	17	10/31/00	03/08/87		
SX-108	NCPLX	ASMD LKR	IS/IP	87	0	0	0.0	0.0	0	0	87	0	12/31/93	03/08/87		
SX-109	NCPLX	ASMD LKR	IS/IP	249	0	0	0.0	0.0	0	0	60	189	10/31/00	05/21/86		
SX-110	NCPLX	ASMD LKR	IS/IP	62	0	0	0.0	0.0	0	0	62	0	10/08/76	02/20/87		
SX-111	NCPLX	ASMD LKR	IS/IP	122	0	8	0.0	0.0	8	3	122	0	06/30/99	06/09/94		
SX-112	NCPLX	ASMD LKR	IS/IP	108	0	6	0.0	0.0	6	1	108	0	06/30/99	03/10/87		
SX-113	NCPLX	ASMD LKR	IS/IP	31	0	0	0.0	0.0	0	0	31	0	06/30/99	03/18/88		
SX-114	NCPLX	ASMD LKR	IS/IP	165	0	0	0.0	0.0	0	0	44	121	10/31/00	02/26/87		
SX-115	NCPLX	ASMD LKR	IS/IP	12	0	0	0.0	0.0	0	0	12	0	04/28/82	03/31/88		
15 SINGLE-SHELL TANKS TOTALS:				3734	134	326	7.8	659.1	460	387	927	2673				

T TANK FARM STATUS

T-101	NCPLX	ASMD LKR	IS/PI	102	1	20	0.0	25.3	21	16	37	64	06/30/99	04/07/93		
T-102	NCPLX	SOUND	IS/IP	32	13	3	0.0	0.0	16	11	19	0	08/31/84	06/28/89		
T-103	NCPLX	ASMD LKR	IS/IP	27	4	3	0.0	0.0	7	3	23	0	11/29/83	07/03/84		
T-104	NCPLX	SOUND	IS/PI	317	0	31	0.0	149.5	31	27	317	0	12/31/99	06/29/89	10/07/99	
T-105	NCPLX	SOUND	IS/IP	98	0	5	0.0	0.0	5	0	98	0	05/29/87	05/14/87		
T-106	NCPLX	ASMD LKR	IS/IP	21	2	0	0.0	0.0	2	2	19	0	04/28/82	06/29/89		
T-107	NCPLX	ASMD LKR	IS/PI	173	0	34	0.0	11.0	34	20	173	0	05/31/96	07/12/84	05/09/96	
T-108	NCPLX	ASMD LKR	IS/IP	44	0	5	0.0	0.0	5	0	21	23	06/30/99	07/17/84		

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME						SEE FOOTNOTES FOR THESE CHANGES
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATE (Kgal)	DRAIN- ABLE STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SALT		SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO		
											SLUDGE (Kgal)	CAKE (Kgal)					
T-109	NCPLX	ASMD LKR	IS/IP	58	0	10	0.0	0.0	10	3	0	58	06/30/99	02/25/93			
T-110	NCPLX	SOUND	IS/PI	369	1	48	0.0	50.3	48	43	368	0	01/31/00	07/12/84	10/07/99		
T-111	NCPLX	ASMD LKR	IS/PI	446	0	38	0.0	9.8	38	35	446	0	04/18/94	04/13/94	02/13/95		
T-112	NCPLX	SOUND	IS/IP	67	7	4	0.0	0.0	11	7	60	0	04/28/82	08/01/84			
T-201	NCPLX	SOUND	IS/IP	29	1	4	0.0	0.0	5	1	28	0	05/31/78	04/15/86			
T-202	NCPLX	SOUND	IS/IP	21	0	3	0.0	0.0	3	0	21	0	07/12/81	07/06/89			
T-203	NCPLX	SOUND	IS/IP	35	0	5	0.0	0.0	5	0	35	0	01/31/78	08/03/89			
T-204	NCPLX	SOUND	IS/IP	38	0	5	0.0	0.0	5	0	38	0	07/22/81	08/03/89			
16 SINGLE-SHELL TANKS TOTALS:				1877	29	218	0.0	245.7	246	168	1703	145					
TX TANK FARM STATUS																	
TX-101	NCPLX	SOUND	IS/IP/CCS	87	3	8	0.0	0.0	11	7	74	10	06/30/99	10/24/85			
TX-102	NCPLX	SOUND	IS/IP/CCS	217	0	27	0.0	94.4	27	16	0	217	08/31/84	10/31/85			
TX-103	NCPLX	SOUND	IS/IP/CCS	157	0	18	0.0	68.3	18	11	0	157	06/30/99	10/31/85			
TX-104	NCPLX	SOUND	IS/IP/CCS	65	5	9	0.0	3.6	14	9	23	37	06/30/99	10/16/84			
TX-105	NCPLX	ASMD LKR	IS/IP/CCS	609	0	25	0.0	121.5	25	14	0	609	08/22/77	10/24/89			
TX-106	NCPLX	SOUND	IS/IP/CCS	341	0	37	0.0	134.6	37	30	0	341	06/30/99	10/31/85			
TX-107	NCPLX	ASMD LKR	IS/IP/CCS	36	1	6	0.0	0.0	7	1	8	27	06/30/99	10/31/85			
TX-108	NCPLX	SOUND	IS/IP/CCS	134	0	8	0.0	13.7	8	1	6	128	06/30/99	09/12/89			
TX-109	NCPLX	SOUND	IS/IP/CCS	384	0	6	0.0	72.3	6	2	384	0	06/30/99	10/24/89			
TX-110	NCPLX	ASMD LKR	IS/IP/CCS	482	0	14	0.0	115.1	14	10	37	425	06/30/99	10/24/89			
TX-111	NCPLX	SOUND	IS/IP/CCS	370	0	10	0.0	98.4	10	6	43	327	06/30/99	09/12/89			
TX-112	NCPLX	SOUND	IS/IP/CCS	649	0	26	0.0	94.0	26	21	0	649	05/30/83	11/19/87			
TX-113	NCPLX	ASMD LKR	IS/IP/CCS	653	0	30	0.0	19.2	30	0	0	653	10/31/00	04/11/83	09/23/94		
TX-114	NCPLX	ASMD LKR	IS/IP/CCS	535	0	17	0.0	104.3	17	11	4	531	06/30/99	04/11/83	02/17/95		
TX-115	NCPLX	ASMD LKR	IS/IP/CCS	568	0	25	0.0	99.1	25	15	0	568	06/30/99	06/15/88			
TX-116	NCPLX	ASMD LKR	IS/IP/CCS	631	0	21	0.0	23.8	21	17	68	563	06/30/99	10/17/89			
TX-117	NCPLX	ASMD LKR	IS/IP/CCS	626	0	10	0.0	54.3	10	5	29	597	06/30/99	04/11/83			
TX-118	NCPLX	SOUND	IS/IP/CCS	286	0	0	0.0	89.1	0	0	21	265	02/01/00	12/19/79			
18 SINGLE-SHELL TANKS TOTALS:				6810	9	297	0.0	1205.7	306	176	697	6104					

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		PHOTOS/VIDEOS		SEE FOOTNOTES FOR THESE CHANGES	
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATE	DRAIN- ABLE	PUMPED	TOTAL	DRAIN- ABLE	PUMP- ABLE	SALT		SOLIDS	LAST		LAST
					LIQUID (Kgal)	INTER- STIT. (Kgal)	THIS MONTH (Kgal)	PUMPED (Kgal)	LIQUID REMAIN (Kgal)	LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	CAKE (Kgal)	VOLUME UPDATE	IN-TANK PHOTO		IN-TANK VIDEO
TY TANK FARM STATUS																
TY-101	NCPLX	ASMD LKR	IS/IP/CCS	118	0	2	0.0	8.2	2	0	72	46	06/30/99	06/22/89		
TY-102	NCPLX	SOUND	IS/IP/CCS	64	0	12	0.0	6.6	12	5	0	64	06/26/82	07/07/87		
TY-103	NCPLX	ASMD LKR	IS/IP/CCS	162	0	20	0.0	11.5	20	16	162	0	07/09/82	06/22/89		
TY-104	NCPLX	ASMD LKR	IS/IP/CCS	43	0	4	0.0	0.0	4	0	43	0	06/27/90	11/03/87		
TY-105	NCPLX	ASMD LKR	IS/IP/CCS	231	0	12	0.0	3.6	12	10	231	0	04/26/82	09/07/89		
TY-106	NCPLX	ASMD LKR	IS/IP/CCS	21	0	3	0.0	0.0	3	0	21	0	06/30/99	06/22/89		
6 SINGLE-SHELL TANKS TOTALS:				639	0	53	0.0	29.9	53	31	529	110				
U TANK FARM STATUS																
U-101	NCPLX	ASMD LKR	IS/IP	25	3	3	0.0	0.0	6	2	22	0	04/26/82	06/19/79		
U-102	NCPLX	SOUND	/PI	301	0	29	2.6	74.0	29	19	43	258	01/31/01	06/06/89	(e)	
U-103	NCPLX	SOUND	IS/PI	416	1	33	0.0	98.9	34	28	13	404	05/31/00	09/13/88		
U-104	NCPLX	ASMD LKR	IS/IP	122	0	0	0.0	0.0	0	0	79	43	06/30/99	06/10/89		
U-105	NCPLX	SOUND	/PI	331	0	37	0.0	87.5	37	33	32	299	07/31/00	07/07/88	(b)	
U-106	NCPLX	SOUND	/PI	187	0	29	0.0	39.1	29	17	0	187	12/31/00	07/07/88	(f)	
U-107	DSSF	SOUND	/PI	406	33	92	0.0	0.0	125	115	15	390	12/31/98	10/27/88		
U-108	NCPLX	SOUND	/PI	468	24	108	0.0	0.0	132	124	29	415	12/31/98	09/12/84		
U-109	NCPLX	SOUND	/PI	399	0	61	0.0	65.9	61	52	35	364	12/31/00	07/07/88	(d)	
U-110	NCPLX	ASMD LKR	IS/PI	186	0	18	0.0	0.0	18	14	186	0	12/30/84	12/11/84		
U-111	DSSF	SOUND	/PI	329	0	80	0.0	0.0	80	71	26	303	12/31/98	06/23/88		
U-112	NCPLX	ASMD LKR	IS/IP	49	4	4	0.0	0.0	8	4	45	0	02/10/84	06/03/89		
U-201	NCPLX	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	06/15/79	06/06/89		
U-202	NCPLX	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	06/15/79	06/06/89		
U-203	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	06/15/79	06/13/89		
U-204	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	06/15/79	06/13/89		
16 SINGLE-SHELL TANKS TOTALS:				3239	69	496	2.6	365.4	585	483	537	2633				
GRAND TOTAL				33230	1363	3451	10.4	5637.8	4814	3908	11059	20808				

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS
FOOTNOTES:

Total Waste is calculated as the sum of Sludge and Saltcake plus Supernate. The category "Interim Isolated (II) was changed to Intrusion Prevention (IP) in June 1993. Stabilization information from WHC-SD-RE-TI-178 SST STABILIZATION RECORD, latest revision, or SST Stabilization or Cognizant Engineer

Porosity values are 25% for saltcake and 15% for sludge, per HNF-2978, Rev. 1, "Updated Pumpable Liquid Volume Estimates and Jet Pump Durations for Interim Stabilization of Remaining Single-Shell Tanks," September 1999, with the exception of those tanks which have been interim stabilized and the porosities recalculated.

(a) S-106 This tank was Interim Stabilized on February 1, 2001. DOE concurred on February 12, 2001.

(b) U-106 Pumping was discontinued July 13, 2000, due to pump failure. Waste levels are being allowed to stabilize, so waste porosities and final waste volumes can then be calculated to determine whether this tank meets Interim Stabilization. As of February 28, 2001, waste levels had not yet stabilized.

(c) S-102 Following information from Cognizant Engineer

Pumping commenced March 18, 1999. Many pumping problems occurred over the following months, and the pump has been replaced several times. Pumping was interrupted again in June 2000. (No pumping since June 2000).

(d) U-109 Following information from Cognizant Engineer

Pumping began March 11, 2000. Saltcake volume is adjusted to correspond to current waste removal. Remaining volumes based on HNF-2978, Rev. 2.

Pumping was shut down on December 3, 2000, due to jet pump failure. Attempts to restart the pump have been unsuccessful. The tank is currently under observation mode to determine eligibility for interim stabilization with major equipment failure.

(e) U-102 Following information from Cognizant Engineer

Pumping began in this tank on January 20, 2000. Saltcake volume is adjusted to correspond to current waste removal. Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 300.9 Kgal
 Supernate: 0.0 Kgal
 Drainable Interstitial Liquid: 29.0 Kgal
 Pumped this Month: 0.0 Kgal (27 gal)
 Total Pumped: 74.0 Kgal
 Drainable Liquid Remaining: 29.0 Kgal
 Pumpable Liquid Remaining: 19.0 Kgal
 Sludge: 43.0 Kgal
 Saltcake: 257.9 Kgal

During February 2001, a total of 340 gal of fluid was removed with 313 gal of water added by pump priming/equipment flushes, for a net removal of 27 gal of waste. In addition, 1,353 gal of water were used as dilution and 713 gal of water were used for transfer line flushes. In February 2001, only 27 gal of waste was removed from the tank.

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENT

FOOTNOTES:

(f) SX-105 Following information from Cognizant Engineer:

Saltwell pumping began August 8, 2000.
Remaining volumes are based on HNF-2978, Rev. 2.

Tank Waste: 485.9 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 1.9 Kgal
Pumped this month: 1.8 Kgal
Total Pumped: 15.1 Kgal
Drainable Liquid Remaining: 1.9 Kgal
Pumpable Liquid Remaining: -10.1 Kgal (*)
Sludge: 65.0 Kgal
Settles: 430.0 Kgal

In February 2001, a total of 2,069 gal of fluid was removed with 269 gal of water added by pump priming and system flushes, for a net removal of 1,820 gal of waste.
In addition, 1,961 gal of dilution water and 50 gal of water for transfer lines flushes were used.

(*) Minus 1,097 gal estimate for PLR because there is more pumpable liquid in the tank than originally estimated. This is due to the fact that approx. 118,000 gal of supernate was in the tank at the start of pumping.

(g) A-101 Following information from Cognizant Engineer

Pumping began on May 6, 2000. No pumping since August 2000.
Remaining volumes are based on the original estimated volumes in HNF-2978, Rev. 1.

(h) AX-10 Following information from Cognizant Engineer

Pumping began July 29, 2000. No pumping since August 2000.
Remaining volumes are based on the original estimated volumes in HNF-2978, Rev. 1.

(i) U-106 Following information from Cognizant Engineer:

Pumping began August 24, 2000. Remaining volumes are based on HNF-2978, Rev. 2.
Pumping rate has fallen below the 0.05 GPM criteria. The pump failed on December 29, 2000. This tank is currently in observation mode to determine eligibility for interim stabilization.

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TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

February 28, 2001

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(j) S-109 Following information from Cognizant Engineer:

Pumping began September 23, 2000.

Remaining volumes are based on HNF-2978, Rev. 2.

The pumping rate dropped below .05 gpm and the pump was shut down on January 27, 2001. The tank is now being evaluated to determine if it can be interim stabilized.

(k) SX-103 Following information from Cognizant Engineer:

Pumping began October 26, 2000.

Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 524.0 Kgal

Supernate: 0.0 Kgal

Drainable Interstitial Liquid: 37.0 Kgal

Pumped this month: 6.0 Kgal

Total Pumped: 110 Kgal

Drainable Liquid Remaining: 37.0 Kgal

Pumpable Liquid Remaining: 22.0 Kgal

Sludge: 115.0 Kgal

Saltcake: 409.0 Kgal

In February 2001, a total of 6,361 gal of fluid was removed with a total of 365 gal of water added by pump priming/equipment flushes, for a net removal of 5,996 gal of waste. In addition, 7,088 gal of water were used as dilution and 3,727 gal of water were used for transfer line flushes.

(l) SX-101 Following information from Cognizant Engineer:

Pumping began November 22, 2000

Remaining volumes are based on HNF-2978, Rev 2. Saltcake volume is adjusted to correspond to current waste removal.

Total Waste: 428.8 Kgal

Supernate: 0.0 Kgal

Drainable Interstitial: 92.8 Kgal

Pumped this Month: 6.9 Kgal

Total Pumped: 19.2 Kgal

Drainable Liquid Remaining: 92.8 Kgal

Pumpable Liquid Remaining: 86.7 Kgal

Sludge: 0.0 Kgal

Saltcake: 428.8 Kgal

No pumping since December 2000.

APPENDIX B
PERFORMANCE SUMMARY

TABLE B-1. SUMMARY OF WASTE TRANSACTIONS IN THE DOUBLE-SHELL TANK (DST) SYSTEM

February 28, 2001

All volumes in Kilo-Gallons

- The DST system received waste additions from SST pumping, Tank Farms, NaOH, campaign 01-01, & 151-AZ in February.
- There was a net change of +81,000 gallons in the DST system for February 2001.
- The total DST inventory as of February 28, 2001 was 21.207 million gallons.
- There were 0 Kgals of Saltwell Liquid (SWL) pumped to the East Area DSTs (101-AN) in February.
- There were ~20 Kgals of SWL pumped to the West Area DSTs (102-SY) in February.
- The SWL numbers are preliminary and are subject to change once cognizant engineers do a validation, the volumes reported contain actual waste volume plus any water added for dilution and transfer line flushes.
- There were ~72,000 gallons of caustic (NaOH) (four transfers), added to Tank 102-AY in February, ~1000 gallons of water was used to flush the waste transfer system after the caustic additions.
- The Cold Run (training and testing) for evaporator 242A campaign 01-01 commenced in February, ~2,000 gallons of water was added to Tank 102-AW in conjunction with the Cold Run. Up to 120,000 gallons of water can be expected to be received into Tank 102-AW during campaign 01-01 Cold Run activities.
- The solids volumes in Tanks 101-AY and 102-AY were adjusted in February. The driver for these changes was new "Tank Farm Sludge Level Readings" taken Jan. 19, 2001. BBIM cog. Engineers reviewed the data and concurred with the change.
- SST 106-S was deemed Interim Stabilized in February. The tank has met stabilization criteria and documentation has been issued. Tank S-106 final waste volume inventories (post stabilization) are: ~429 Kgals of Saltcake with ~26 Kgals of Interstitial Liquid, for a total waste volume of ~455 Kgals.

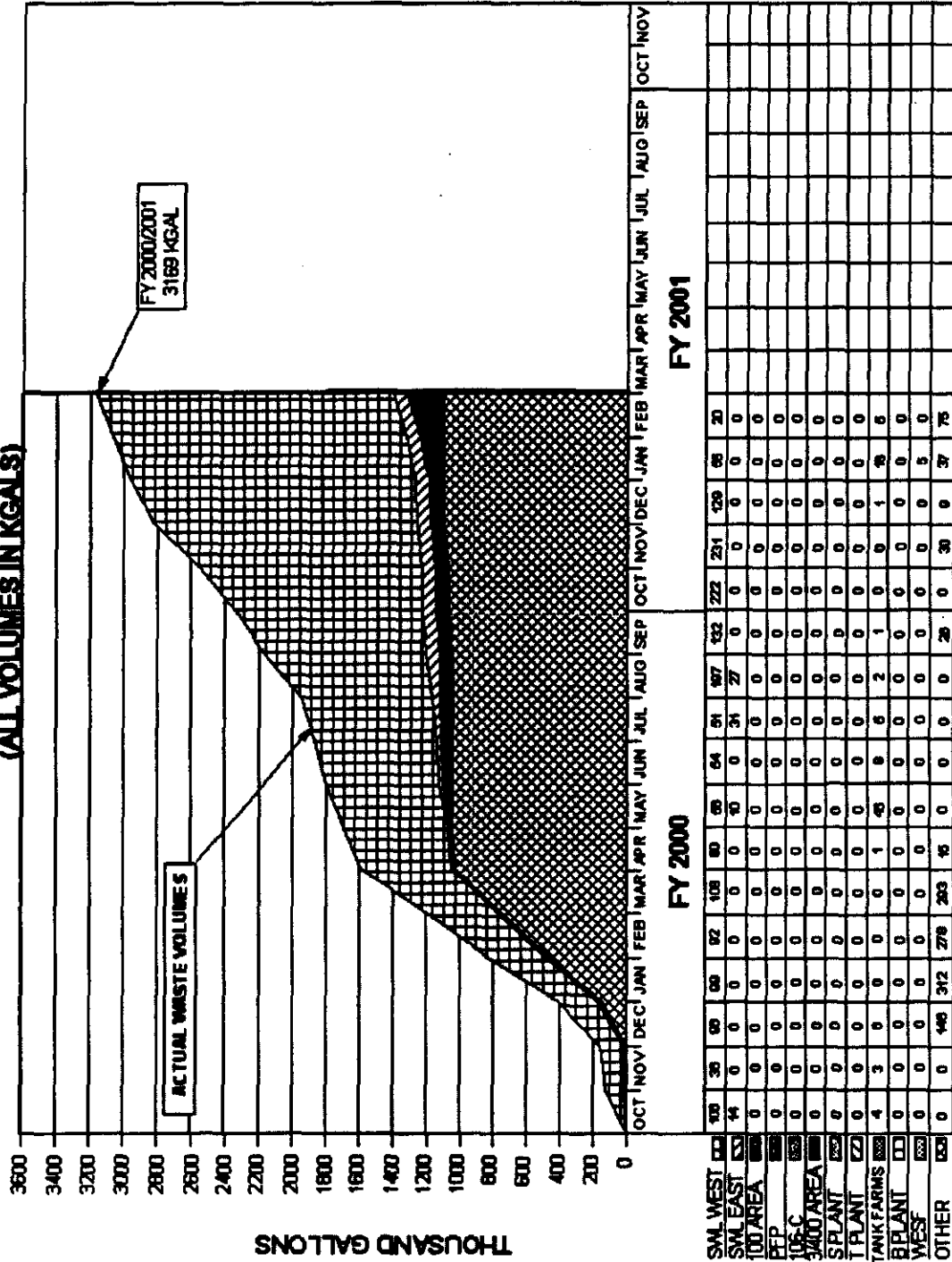
FEBRUARY 2001 DST WASTE RECEIPTS					
FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
SWL (West)	+20 Kgal (2SY)	SLURRY	+0 Kgal	SLURRY	-4 Kgal
Caustic (NaOH)	+73 Kgal (2AY)	CONDENSATE	+7 Kgal	CONDENSATE	-4 Kgal
Tank Farms	+5 Kgal (2AN)	INSTRUMENTATION	+0 Kgal	INSTRUMENTATION	-13 Kgal
Evap. Training	+2 Kgal (2AW)	UNKNOWN	+0 Kgal	UNKNOWN	-5 Kgal
TOTAL	+100 Kgal	TOTAL	+7 Kgal	TOTAL	-26 Kgal

PROJECTED VERSUS ACTUAL WASTE VOLUMES						
	ACTUAL DST WASTE RECEIPTS	PROJECTED DST WASTE RECEIPTS (1)	MISC. DST CHANGES (+/-)	PROJECTED WVR (1)	NET DST CHANGE	TOTAL DST VOLUME
OCT00	222	155	-24	0	198	20653
NOV00	281	282	-14	0	247	20900
DEC00	139	300	-1	0	138	21038
JAN01	113	397	-25	0	88	21126
FEB01	100	303	-19	0	81	21207
MAR01		-283		-684		
APR01		321		0		
MAY01		302		0		
JUN01		334		0		
JUL01		296		0		
AUG01		289		0		
SEP01		282		0		

(1): The "PROJECTED DST WASTE RECEIPTS" and "WVR" numbers were updated in November 2000, the projected volumes will be updated as new and/or more accurate information is obtained. The projected volumes reported are the most current available, as supplied by cognizant engineers.

242-A Evaporator Waste Volume Reduction:	
Campaign 94-1 (04/15/94 - 06/13/94)	-2417
Campaign 94-2 (09/22/94 - 11/18/94)	-2787
Campaign 95-1 (06/09/95 - 07/26/95)	-2161
Campaign 96-1 (05/07/96 - 05/25/96)	-1117
Campaign 97-1 (03/24/97 - 04/02/97)	-351
Campaign 97-2 (09/16/97 - 09/30/97)	-653
Campaign 99-1 (07/24/99 - 08/15/99)	-818
Campaign 00-1 (04/20/00 - 05/05/00)	-682
Total waste reduction (WVR) since restart on 4/15/94	-10966

COMPARISON OF WASTE VOLUME GENERATIONS FOR HANFORD FACILITIES (ALL VOLUMES IN KGALS)



NOTE: The Other Category is for Waste Generations from, E vaporator Training, Pressure Tests, Cross-Site Transfers, Causalic Additions and Tank 101-SY remediation work

Figure B-1. Comparison of Projected Versus Actual Waste Volumes for Hanford Facilities

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APPENDIX C

**DOUBLE-SHELL TANK WASTE TYPE
AND SPACE ALLOCATION**

Table C-1. Double-Shell Tank Waste Inventory - February 28, 2001

TOTAL AVAILABLE DST SPACE						MONTHLY INVENTORY CHANGE					
NON-AGING = 27360						D160 TOTAL 21726					
AGING = 3270						D201 TOTAL 21727					
TOTAL = 31290						CHANGE = 51					

TANK NAME	WASTE TYPE	TOTAL INVENTORY (1)	TOTAL SUPERNATE	TOTAL SOLIDS (2)	SALTCAKE (2)	SALTCAKE LIQUID	SUDGE (2)	SUDGE LIQUID	REMAINING UNUSED TANK SPACE
241-AA-101	DN	224	224	0	0	0	0	0	616
241-AA-102	CC	1066	866	467	467	114	0	0	46
241-AA-103	D88F	866	866	446	446	112	0	0	164
241-AA-104	D88F	1062	803	446	446	112	0	0	46
241-AA-105	D88F	1128	621	468	468	12	0	0	12
241-AA-106	CC	38	21	17	17	4	0	0	1102
241-AA-107	CC	1040	793	247	247	62	0	0	100
241-AA-101	D88F	1114	1114	0	0	0	0	0	26
241-AA-102	CP	1046	1046	0	0	0	0	0	62
241-AA-103	CC	282	282	0	0	0	0	0	666
241-AA-104	CC	1106	1106	0	0	0	0	0	32
241-AA-105	D88F	1134	1045	89	89	22	0	0	6
241-AA-106	CC	623	623	0	0	0	0	0	616
241-AA-107	CC	663	663	0	0	0	0	0	157
241-AA-108	DN	37	37	0	0	0	0	0	1103
241-AA-101	D88F	1126	751	378	378	64	0	0	14
241-AA-102	DN	866	866	30	30	6	0	0	272
241-AA-103	MCNV	806	146	260	47	12	0	0	62
241-AA-104	DN	316	86	231	231	46	0	0	624
241-AA-105	MCNV	426	171	0	0	0	0	0	714
241-AA-106	D88F	778	469	256	256	0	0	0	422
241-AA-107	DN	186	186	78	239	60	0	0	786
241-AA-101	CC	165	107	78	0	0	0	0	335
241-AA-102	DN	165	472	173	0	0	0	0	80
241-AA-101	MCNV	824	872	62	0	0	62	6	0
241-AA-102	MCNV	866	861	106	0	106	18	0	0
241-AA-101	CC	570	367	83	83	0	0	0	170
241-AA-102	CC	802	831	71	0	0	71	11	234
241-AA-103	CC	742	378	366	366	62	0	0	366
		31297	16641	4356	3268	623	1448	189	10669

NOTE: All Volumes in Kilo-Gallons (Kgal); Tanks 101-AV and 102-AV series updates in February

(1) Total Inventory = Total Supernate + Total Solids

(2) Saltcake Includes Saltcake Liquid; Sludge Includes Sludge Liquid

(3) Total Solids = (Saltcake + Sludge)

Tank Space Usage

TANK SPACE CHANGE	10171
1200 TANK SPACE	10089
0101 TANK SPACE	422
CHANGE*	422

OPERATIONAL SPACE

AA-106*	1103
AA-102*	2723
AA-108*	143
AA-109*	402
SV-109*	236
TOTAL*	2728

RESTRICTED SPACE

AA-102*	82
AA-107*	100
AA-102*	62
AZ-101*	60
AZ-102*	0
SV-101*	170
TOTAL*	463

WATCH LIST SPACE

AA-102*	164
AA-104*	82
AA-106*	12
AA-101*	14
SV-109*	266
TOTAL*	608

NON-ALLOCATED SPACE

AA-101*	616
AA-106*	1102
AA-101*	26
AA-102*	656
AA-104*	32
AA-106*	6
AA-108*	616
AA-107*	187
AA-108*	622
AA-104*	624
AA-101*	796
AA-102*	336
TOTAL*	6201
EMERGENCY SPACE	-1146
LAW or H.W RETURN	-1146
REMAINING SPACE	3921

Inventory Calculation by Waste Type:

DILUTE SUPERNATE (DN)		224
AA-101*		37
AA-102*		636
AA-102*		146
AA-104*		82
AA-106*		111
SV-102*		472
TOTAL DN*		1872
TOTAL SOLIDS*		1062

SLURRY SUPERNATE (D88F)		466
AA-102*		622
AA-102*		622
AA-101*		1114
AA-106*		1045
AA-101*		791
AA-106*		466
TOTAL D88F*		5160
TOTAL SOLIDS*		3086

COMPLEXED SUPERNATE (D88C)		666
AA-102*		21
AA-101*		783
AA-102*		242
AA-104*		1102
AA-102*		622
AZ-101*		652
AA-101*		106
SV-101*		467
SV-102*		811
SV-102*		378
TOTAL D88C*		3676
TOTAL SOLIDS*		2448

AGING SUPERNATE (AW)		872
AZ-101*		621
AZ-102*		821
TOTAL AW*		1783
TOTAL SOLIDS*		157

PHOSPHATE SUPERNATE (CP)		1066
TOTAL CP*		1066

DST SLUDGE / SALTCAKE LIQUID		62
AA-102*		62
AA-102*		36
AA-102*		60
AA-101*		11
AA-102*		26
AZ-101*		8
AZ-102*		16
SV-101*		31
AA-102*		11
SV-102*		62
AA-102*		62
TOTAL SLUDGE / SALTCAKE LIQUID*		367

ONAND TOTALS		4408
DILUTE SUPERNATE (DNDC)		5150
SLURRY (D88F)		4642
CONCENTRATED COMPLEXED (CC)		1066
AGING SUPERNATE (AW)		1783
DST SOLIDS (NO LIQUID)		3265
DST SLUDGE / SALTCAKE LIQUID		367
TOTAL*		21267

Table C-2. Double-Shell Tank Waste Inventory - February 28, 2001

TOTAL AVAILABLE USABLE AS OF FEBRUARY 28, 2001 =				10089 KGALS
WATCH LIST TANK SPACE:				
	TANK	WASTE TYPE	AVAILABLE SPACE	
Unusable DST Headspace - Due to Special Restrictions Placed on the Tanks, as Stated in the "Wyden Bill"	AN-103	DSS	184 KGALS	
	AN-104	DSSF	88 KGALS	
	AN-105	DSSF	12 KGALS	
	AW-101	DSSF	14 KGALS	
	SY-103	CC	398 KGALS	
	TOTAL=			696 KGALS
AVAILABLE TANK SPACE=			10089 KGALS	
MINUS WATCH LIST SPACE=			-696 KGALS	
			9393 KGALS	
TOTAL AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=				
RESTRICTED TANK SPACE:				
	TANK	WASTE TYPE	AVAILABLE SPACE	
DST Headspace Available to Store Only Specific Waste Typ	AN-102	CC	85 KGALS	
	AN-107	CC	100 KGALS	
	AP-102	CP	52 KGALS	
	AZ-101	AW	56 KGALS	
	AZ-102	AW	0 KGALS	
	SY-101	CC	170 KGALS	
TOTAL=			463 KGALS	
AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=			9393 KGALS	
MINUS RESTRICTED SPACE=			-463 KGALS	
			8930 KGALS	
TOTAL AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=				
OPERATIONAL TANK SPACE				
	TANK	WASTE TYPE	AVAILABLE SPACE	
DST Headspace Available For Facility Generated Waste and 242-A Evaporator Operations	AP-108	DN	1103 KGALS	
	AW-102	DN	272 KGALS	
	AW-105	NCRW	714 KGALS	
	AW-106	DSSF	402 KGALS	
	SY-102	DC	238 KGALS	
TOTAL=			2729 KGALS	
AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=			8930 KGALS	
MINUS OPERATIONAL SPACE=			-2729 KGALS	
			6201 KGALS	
TOTAL AVAILABLE SPACE AFTER OPERATIONAL SPACE DEDUCTIONS=				
NON-ALLOCATED TANK SPACE				
	TANK	WASTE TYPE	AVAILABLE SPACE	
Non-Allocated DST Headspace	AN-101	DN	916 KGALS	
	AN-106	CC	1102 KGALS	
	AP-101	DSSF	26 KGALS	
	AP-103	CC	858 KGALS	
	AP-104	CC	32 KGALS	
	AP-105	DSSF	6 KGALS	
	AP-106	DC	518 KGALS	
	AP-107	DC	157 KGALS	
	AW-103	NCRW	632 KGALS	
	AW-104	DN	824 KGALS	
	AY-101	DC	795 KGALS	
	AY-102	DN	335 KGALS	
TOTAL NON-ALLOCATED TANK SPACE=			6201 KGALS	
EMERGENCY TANK SPACE			-1140 KGALS	
LAW OF HLW RETURN SPACE:			-1140 KGALS	
TOTAL TANK SPACE AVAILABLE AFTER ALL DEDUCTIONS			3921 KGALS	

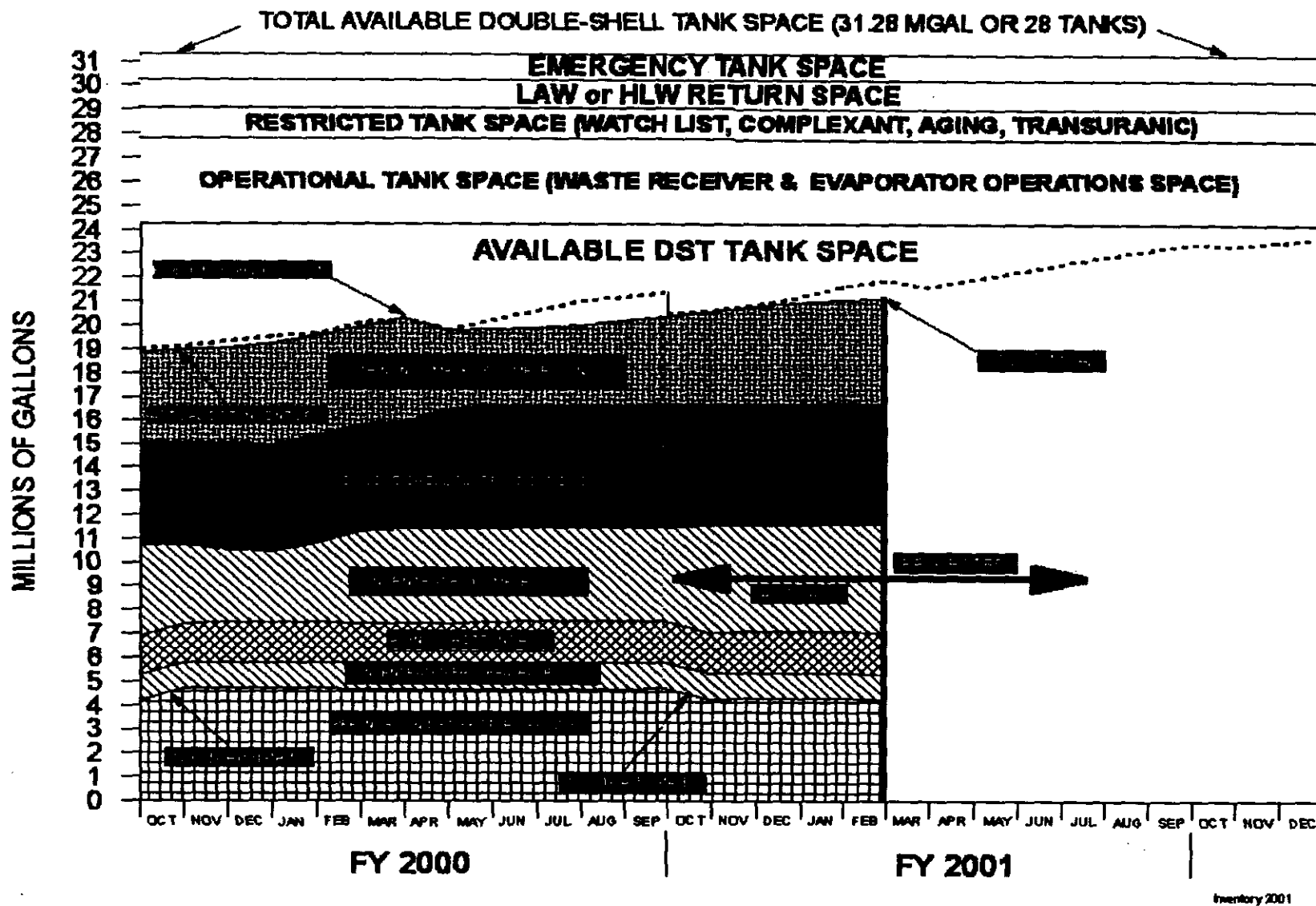


Figure C-1. Total Double-Shell Tank Inventory

APPENDIX D

WASTE TANK SURVEILLANCE MONITORING TABLES

Temperatures are taken in the waste unless in-waste thermocouples are out of service. Temperatures below are the highest temperatures recorded in these tanks during this month.

HYDROGEN (FLAMMABLE GAS)					
Single-Shell Tanks			Double-Shell Tanks		
<u>Tank No.</u>	<u>Temp.</u>	<u>Officially Added to Watch List</u>	<u>Tank No.</u>	<u>Temp.</u>	<u>Officially Added to Watch List</u>
A-101	143	1/91	AN-103	103	1/91
AX-101	128	1/91	AN-104	105	1/91
AX-103	106	1/91	AN-105	101	1/91
S-102	100	1/91	AW-101	98	6/93
S-111	89	1/91	SY-103	95	1/91
S-112	83	1/91			
SX-101	127	1/91			
SX-102	139	1/91			
SX-103	154	1/91			
SX-104	137	1/91			
SX-105	158	1/91			
SX-106	98	1/91			
SX-109 (1)	133	1/91			
T-110	63	1/91			
U-103	87	1/91			
U-105	87	1/91			
U-107	78	12/93			
U-108	86	1/92			
U-109	85	1/91			

19 SSTs

19 Single-Shell Tanks
5 Double-Shell Tanks
 24 Tanks on Watch List

TABLE D-1. TEMPERATURE MONITORING IN WATCH LIST TANKS
(sheet 2 of 2)

Notes:

Unreviewed Safety Question (USQ):

When a USQ is declared, special controls are required, and work in the tanks is limited. There are currently no USQs on any tanks.

Hydrogen/Flammable Gas:

These tanks are suspected of having a significant potential for hydrogen/flammable gas generation, entrapment, and episodic release. The USQ associated with these tanks was closed in September 1998. Twenty-four tanks (19 SST and 5 DST) remain on the Hydrogen Watch List.

High Heat:

These tanks contain heat generating strontium-rich sludge and require drainable liquid to be maintained in the tank to promote cooling. There are currently nine tanks on the High Heat Load List but no tanks on the High Heat Load Watch List.

Active ventilation:

There are 15 single-shell tanks on active ventilation (seven are on the Watch List as indicated by an asterisk):

C-105	SX-107
C-106 (2)	SX-108
SX-101 *	SX-109 * (1)
SX-102 *	SX-110
SX-103 *	SX-111
SX-104 *	SX-112
SX-105 *	SX-114
SX-106 *	

Footnotes:

- (1) Tank SX-109 is on the Hydrogen Watch List as it has the potential for flammable gas accumulation only because other SX tanks vent through it.
- (2) Tank C-106 was removed from the High Heat Load Watch List on December 16, 1999.

TABLE D-2. TEMPERATURE MONITORING IN NON-WATCH LIST TANKS
February 28, 2001

SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>26,000 Btu/hr)

Nine tanks have high heat loads for which temperature surveillance requirements are established by HNF-SD-WM-TSR-006, Rev 1, *Tank Waste Remediation System Technical Safety Requirements*, December 1999.

In an analysis, WHC-SD-WM-SARR-010, Rev 1, *Heat Removal Characteristics of Waste Storage Tanks*, Kummerer, 1995, it was estimated that nine tanks have heat sources >26,000 Btu/hr, which is the new parameter for determining high heat load tanks. See also document HNF-SD-WM-BIO-001, Rev 1, *Tank Waste Remediation System Basis for Interim Operation*, Noorani, 1998.

Temperatures in these tanks did not exceed the Technical Safety Requirements (TSR) for this month, and are monitor and Control System (TMACS), unless indicated otherwise. All high heat load tanks are on active ventilation.

<u>Tank No.</u>	<u>Temperature (F.)</u>
C-106 (1)	56 (Riser #8)
SX-103	154
SX-107	162
SX-108	179
SX-109 (2)	133
SX-110	161
SX-111	181
SX-112	145
SX-114	173
0 Tanks	

Notes:

- (1) C-106 was removed from the High Heat Load Watch List on December 16, 1999. The final thermal analysis report, RPP-6463, Rev. 0, "Thermal Analysis for Tanks 241-AY-102 and C-106," was issued August 9, 2000. The report concluded that the best estimate heat load for C-106 is between 7,000 and 11,000 Btu/hr. Although it no longer meets the criteria for a high heat load tank, it will take an AB change to revise the temperature control limits and monitoring frequency. The AB Amendment request is pending review by ORP.
- (2) SX-109 is on the Hydrogen Watch List as it has the potential for flammable gas accumulation only because the other SX tanks vent through it.

SINGLE-SHELL TANKS WITH LOW HEAT LOADS (<26,000 Btu/hr)

There are 114 low heat load non-watch list tanks. Temperatures in tanks connected to TMACS are monitored by TMACS; temperatures in those tanks not yet connected to TMACS are manually taken semiannually in January and July. Temperatures obtained semiannually have been within historical ranges for the applicable tank.

No temperatures have been obtained for several years in the tanks listed below. Most of these tanks have no thermocouple tree.

<u>Tank No.</u>	<u>Tank No.</u>
BX-104	TX-101
BY-102	TX-110
BY-109	TX-114
C-204	TX-116
SX-115	TX-117
T-102	U-104
T-105	

TABLE D-3. ADDITIONS/DELETIONS TO WATCH LISTS BY YEAR
February 28, 2001

Added/Deleted dates may differ from dates that tanks were officially added to the Watch Lists. (See Table A-1).

	Ferrocyanide	Hydrogen	Organics	High Heat	Total Tanks		
					SST	DST	Total
1/81 Original List (Response to Public Law 101-6)	23	23	8	1	47	6	53
Added 2/81 (revision to Original List)	1 T-107				1		1
Total - December 31, 1981	24	23	8	1	48	6	54
Added 6/82		1 AW-101				1	1
Total - December 31, 1982	24	24	8	1	49	7	56
Added 3/83			1 U-111		1		1
Deleted 7/83	-4 (BX-110) (BX-111) (BY-101) (T-101)				-4		
Added 12/83		1 (U-107)			0		
Total - December 31, 1983	20	25	9	1	46	7	53
Added 2/84			1 T-111		1		1
Added 5/84			10 A-101 AX-102 C-102 S-111 SX-103 TY-104 U-103 U-105 U-203 U-204		4		4
Deleted 11/84	-2 (BX-102) (BX-106)				-2		
Total - December 31, 1984	18	25	20	1	46	7	53
Deleted 6/85	-4 (C-108) (C-109) (C-111) (C-112)				-4		
Deleted 9/86	-14 (BY-103) (BY-104) (BY-105) (BY-106) (BY-107) (BY-108) (BY-110) (BY-111) (BY-112) (T-107) (TX-118) (TY-101) (TY-103) (TY-104)				-12		
Deleted 12/88			-18 (A-101) (AX-102) (B-103) (S-102) (S-111) (SX-103) (SX-106) (T-111) (TX-106) (TX-118) (TY-104) (U-103) (U-105) (U-106) (U-107) (U-111) (U-203) (U-204)		-10		
Total - December 31, 1988	0	25	2	1	22	7	29
Deleted 12/89				-1 (C-108)	-1		
Deleted 06/00			-1 (C-102)		-1		
			-1 (C-103)		-1		
Deleted 01/01		-1 (SY-101)				-1	
Total - February 28, 2001	0	24	0	0	19	6	25

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 1 of 6)

February 28, 2001

The following table indicates whether Single-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month:

NOTE:

All Watch List and High Heat tank temperature monitoring is in compliance. (4)

All Dome Elevation Survey monitoring is in compliance

Psychrometrics monitoring is on "as needed" basis (2).

Drywell monitoring no longer required (5).

In-tank photos/videos are taken "as needed"

LEGEND:

(Shaded)	= In compliance with all applicable documentation
N/C	= noncompliance with applicable documentation
O/S	= Out of Service
Neutron	= LOW readings taken by Neutron probe
POP	= Plant Operating Procedure, TO-040-650
MT/FIC/ENRAF	= Surface level measurement devices
OSD	= Operating Spec. Doc., OST-T-151-00013, 00030, 00031
N/A	= Not applicable (not monitored, or no monitoring schedule)
None	= Applicable equipment not installed
FSAR/TSR	= Final Safety Analysis Report/Technical Safety Requirements

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7) Neutron
	Watch List	High Heat			MT	FIC	ENRAF	
A-101	X			LOW	None	None		
A-102				None	None	None	None	None
A-103				LOW	None	None		
A-104				None	None	None		None
A-105				None	None	None	None	None
A-106				None	None	None		None
AX-101	X			LOW	None	None		(1)
AX-102				None	None	None		None
AX-103	X			None	None	None		None
AX-104				None	None	None		None
B-101				None	None	None		None
B-102				ENRAF	None	None		None
B-103				None	None	None		O/S
B-104				LOW	None	None		
B-105				LOW	None	None		
B-106				ENRAF	None	None		None
B-107				None	None	None		None
B-108				None	None	None		None
B-109				None	None	None		None
B-110				LOW	None	None		(1,2)
B-111				LOW	None	None		
B-112				ENRAF	None	None		None
B-201				ENRAF	None	None		None
B-202				ENRAF	None	None		None
B-203				ENRAF	None	None		None
B-204				ENRAF	None	None		None
BX-101				ENRAF	None	None		None
BX-102				None	None	None		None
BX-103				ENRAF	None	None		None
BX-104			None	ENRAF	None	None		None
BX-105				None	None	None		None
BX-106				ENRAF	None	None		None
BX-107				ENRAF	None	None		None

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 2 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	
BX-108				None	None	None		None
BX-109				None	None	None		None
BX-110				None	None	None		None
BX-111				LOW	None	None		
BX-112				ENRAF	None	None		None
BY-101				LOW	None	None	None	
BY-102			None	LOW	None	None		
BY-103				LOW	None	None		
BY-104				LOW		None	None	
BY-105				LOW		None	None	
BY-106				LOW		None	None	
BY-107				LOW		None	None	
BY-108				None		None	None	None
BY-109			None	LOW	None	Off	None	
BY-110				LOW	None	None		
BY-111				LOW	None	None		
BY-112				LOW		None	None	
C-101				None		None	None	None
C-102 (10)				None	None		None	None
C-103 (10)				ENRAF	None	None		None
C-104				None	None	None		None
C-105				None	None	None		None
C-106 (3)		X		ENRAF	None	None		None
C-107				ENRAF	None	None		None
C-108				None		None	None	None
C-109				None		None	None	None
C-110				MT		None	None	None
C-111				None		None	None	None
C-112				None	None	None		None
C-201				None		None	None	None
C-202				None		None	None	None
C-203				None		None	None	None
C-204			None	None		None	None	None
S-101				ENRAF	None	None		
S-102	X			LOW	None	None		
S-103				ENRAF	None	None		
S-104				LOW	None	None		
S-105				LOW	None	None		
S-106				LOW	None	None		
S-107				ENRAF	None	None		None
S-108				LOW	None	None		
S-109				LOW	None	None		
S-110				LOW	None	None		
S-111	X			ENRAF	None	None		
S-112	X			LOW	None	None		
SX-101	X			LOW	None	None		
SX-102	X			LOW	None	None		
SX-103	X	X		LOW	None	None		
SX-104	X			LOW	None	None		
SX-105	X			LOW	None	None		O/S (13)
SX-106	X			LOW	None	None		
SX-107		X		None	None	None		None
SX-108		X		None	None	None		None

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 3 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7) Neutron
	Watch List	High Heat			MT	FIC	ENRAF	
SX-109	X	X		None	None	None		None
SX-110		X		None	None	None		None
SX-111		X		None	None	None		None
SX-112		X		None	None	None		None
SX-113				None	None	None		None
SX-114		X		None	None	None		None
SX-115			None	None	None	None		None
T-101				None	None	None		None
T-102			None	ENRAF	None	None		None
T-103				None	None	None		None
T-104				LOW	None	None		
T-105			None	None	None	None		None
T-106				None	None	None		None
T-107				ENRAF	None	None		None
T-108				ENRAF	None	None		None
T-109				None	None	None		None
T-110	X			LOW	None	None		
T-111				LOW	None	None		
T-112				ENRAF	None	None		None
T-201				MT		None	None	None
T-202				MT		None	None	None
T-203				None		None	None	None
T-204				MT		None	None	None
TX-101			None	ENRAF	None	None		None
TX-102				LOW	None	None		
TX-103				None	None	None		None
TX-104				None	None	None		None
TX-105				None	None	None		None (B)
TX-106				LOW	None	None		
TX-107				None	None	None		None
TX-108				None	None	None		None
TX-109				LOW	None	None		
TX-110			None	LOW	None	None		
TX-111				LOW	None	None		
TX-112				LOW	None	None		
TX-113				LOW	None	None		
TX-114			None	LOW	None	None		
TX-115				LOW	None	None		
TX-116			None	None	None	None		None
TX-117			None	LOW	None	None		
TX-118				LOW	None	None		
TY-101				None	None	None		None
TY-102				ENRAF	None	None		None
TY-103				LOW	None	None		
TY-104				ENRAF	None	None		None
TY-105				None	None	None		None
TY-106				None	None	None		None
U-101				MT		None	None	None
U-102				LOW	None	None		
U-103	X			LOW	None	None		
U-104			None	None		None	None	None
U-105	X			LOW	None	None		
U-106				LOW	None	None		

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 4 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7) Neutron
	Watch List	High Heat			MT	FIC	ENRAF	
U-107	K			ENRAF	None	None		
U-108	K			LOW	None	None		
U-109	K			LOW	None	None		
U-110				None	None	None		None
U-111				LOW	None	None		
U-112				None		None	None	None
U-201				MT		None	None	None
U-202				MT		None	None	None
U-203				None	None	None		None
U-204				ENRAF	None	None		None
Catch Tanks and Special Surveillance Facilities								
A-302-A	N/A	N/A	N/A	(B)	None	None		None
A-302-B	N/A	N/A	N/A	(B)		None	None	None
ER-311	N/A	N/A	N/A	(B)	None	None		None
AX-162	N/A	N/A	N/A	(B)		None		None
AZ-161	N/A	N/A	N/A	(B)	None		ENRAF	None
AZ-164	N/A	N/A	N/A	(B)		None	None	None
BX-TK/SMP	N/A	N/A	N/A	(B)		None	None	None
A-244 TK/SMP	N/A	N/A	N/A	(B)	None	None	None	None
AR-204	N/A	N/A	N/A	(B)	None	None	None	None
A-417	N/A	N/A	N/A	(B)	None	None	None	None
A-360	N/A	N/A	N/A	(B)	None	None	None	None
CR-003	N/A	N/A	N/A	(B)	None	None	None	None
Vent Sta.	N/A	N/A	N/A	(B)		None	None	None
244-S TK/SMP	N/A	N/A	N/A	(B)	None	None	None	None
S-302	N/A	N/A	N/A	(B)	None	None		None
S-304	N/A	N/A	N/A	(B)	None	None		None
TX-244 TK/SMP	N/A	N/A	N/A	(B)		None	None	None
TX-302-B	N/A	N/A	N/A	(B)		None	None	None
TX-302-C	N/A	N/A	N/A	(B)	None	None		None
U-301-B	N/A	N/A	N/A	(B)	None	None		None
UX-302-A	N/A	N/A	N/A	(B)	None	None		None
S-141	N/A	N/A	N/A	(B)	O/S	None	None	None
S-142	N/A	N/A	N/A	(B)	O/S	None	None	None
Totals:	19	9	N/C: 0		N/C: 0	N/C: 0	N/C: 0	N/C: 0
149 tanks	Hydrogen Watch List Tanks	High Heat Tanks (non-Watch List)						

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS -149 TANKS
(Sheet 5 of 6)

Footnotes:

1. All SSTs have either manual tape, FIC, or ENRAF surface level measuring devices. Some also have zip cords.

ENRAF gauges are being installed to replace FICs (or sometimes manual tapes). The ENRAF gauges are being connected to TMACS, but many are currently being read manually from the field. See Table D-6 for list of ENRAF installations.

2. High heat tanks have active exhausters; psychrometrics can be taken in the high heat tanks. Psychrometric readings are not required by OSD, but can be taken on an "as needed" basis.

Psychrometric readings are taken annually in SX-farm.

3. Tank C-106 was removed from the High Heat Load Watch List on December 16, 1999.

4. Temperature readings may be regulated by OSD, POP, or FSAR (FSAR only regulates high heat load tanks). Temperatures cannot be obtained in 13 low heat load tanks (see Table D-2). The OSD does not require readings or repair of out-of-service thermocouples for the low heat load ($\leq 26,000$ Btu/h) tanks. However, the POP requires that attempts are to be made semiannually in January and July to obtain readings for these tanks.

Temperatures in some tanks cannot be taken in the waste because the waste level is lower than the lowest thermocouple in these tanks.

Temperatures for many tanks are monitored continuously by TMACS; see Table D-7, TMACS Monitoring Status.

5. Document OSD-T-151-00031, "Operating Specifications for Tank Farm Leak Detection," Rev. D-2, December 7, 2000, requires that single-shell tanks with the surface level measurement device contacting liquid, partial liquid, or floating crust surface, will be monitored for leak detection on a daily basis. Tanks with a solid surface will be monitored for leak detection on a weekly basis by taking neutron scan data from a Liquid Observation Well (LOW), if an LOW is present. Tanks with a solid surface but without LOWs will not be monitored for leak detection until an LOW is installed. The OSD specifies what leak detection methods are to be used for each tank, and the requirements if the readings are not taken on the required frequency or if equipment is out of service.

This OSD revision does not require drywell surveys to be taken; drywell scans will only be taken by special request, since any scans would have to be subcontracted. The contractor no longer has drywell scanning equipment.

6. Leak detection for the catch tanks is performed by monitoring for the buildup of liquid in the secondary containment (for most tanks with secondary containment) or for decrease in the liquid level for those tanks without secondary containment or Catch tank 241-S-302 is monitored for intrusions only, and is not subject to leak detection monitoring requirements until liquid is present above the intrusion level.

Weight Factor is the surface level measuring device currently used in A-417, A-350, 244-A Tank/Sump, and 244-S Tank/Sump. Double-Shell Receiver Tank (DCRT) CR-003 is inactive and measured in gallons. 204-AR is also measured in gallons.

7. Document SD-WM-TI-605, REV. 0, dated January 1994, describes the rationale for Liquid Observation Well (LOW) installation priority. This priority is based on tank leak status, tank surface condition, and tank stabilization status. Also included is a listing of tanks with the waste level being below two feet, which have no priority assigned because no effort will be made to install LOWs in the near future. LOW probes are unable to accurately monitor interstitial liquid levels less than two feet high.

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 149 TANKS
(Sheet 6 of 6)

Tanks which will not receive LOWs:

A-102	BX-101	C-201	T-106
A-104	BX-103	C-202	T-108
A-105	BX-105	C-203	T-109
AX-102	BX-106	C-204	TX-107
AX-104	BX-108	SX-110	TY-102
B-102	C-108	SX-113	TY-104
B-103	C-109	SX-115	TY-106
B-112	C-111	T-102	U-101
		T-103	U-112

Total - 34 Tanks

8. Tank TX-105 - the LOW was in riser 8; the riser has been removed and the LOW has not been monitored since January 1987. Liquid levels are being taken in riser 9 by ENRAF and recorded in TMACS.
9. Tank AX-101 - LOW readings are taken by gamma sensors.
10. Tanks C-102 and C-103 were removed from the Organics Salts Watch List on August 23, 2000
11. Tank SX-105 - LOW scan not taken for week ending August 28, 2000. LOW is primary leak detection device; ENRAF is backup and monitored daily in TMACS. LOW has failed structurally, and will be replaced. Work Package 2H0005040. **Fabrication shop has received materials: awaiting scheduling.** (Tank is currently being saltwell pumped).
12. Tank B-110 - LOW scan not taken for week ending October 9, 2000. LOW is primary leak detection device; no stated backup, so device must be repaired in 14 days or an alternative device used to obtain a valid reading before an OSD violation occurs. **Discrepancy Report 00-884 (Rev 3) issued February 8, 2001. The LOW was not repaired and a valid scan obtained by February 7, 2001. The repair provisions in OSD-31 were exceeded and an OSD violation occurred. (For intrusions, an ENRAF gauge was monitored daily in TMACS). A new LOW was installed on February 21, and a scan taken on February 22, 2001, with good results. Discrepancy Report closed.**

TABLE D-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS
28 TANKS (Sheet 1 of 2)
February 28, 2001

The following table indicates whether Double-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month.

NOTE:

Dome Elevation Surveys are not required for DSTs.

Psychrometrics and in-tank photos/videos are taken "as needed" (2)

LEGEND:

(Shaded)	= In compliance with all applicable documentation
N/C	= Noncompliance with applicable documentation
FIC/ENRAF	= Surface level measurement devices
M.T.	
OSD	= OSD-T-151-0007, OSD-T-151-00031
None	= no M.T., FIC or ENRAF installed
O/S	= Out of Service
W.F.	= Weight Factor
N/A	= Not Applicable (not monitored or no monitoring schedule)
Rad.	= Radiation

Tank Number	Watch List	Temperature Readings (3) (OSD)	Surface Level Readings (1) (OSD)			Radiation Readings		Annulus (OSD)
						Leak Detection Pits (4) (OSD)		
			M.T.	FIC	ENRAF	W.F.	Rad. (6)	
AN-101				None			N/A	
AN-102				None			N/A	
AN-103	X			None			N/A	
AN-104	X		O/S	None			N/A	
AN-105	X		O/S	None			N/A	
AN-106				None			N/A	
AN-107				None		O/S	N/A	
AP-101			O/S	None		O/S (7)	N/A	O/S
AP-102				None		O/S (7)	N/A	
AP-103				None		O/S (7)	N/A	
AP-104			O/S	None		O/S (7)	N/A	
AP-105				None		O/S (7)	N/A	
AP-106				None		O/S (7)	N/A	
AP-107				None		O/S (7)	N/A	
AP-108				None		O/S (7)	N/A	
AW-101	X		O/S	None			N/A	
AW-102					(8)		N/A	
AW-103				None			N/A	
AW-104				None			N/A	
AW-105				None			N/A	
AW-106				None			N/A	
AY-101				None		O/S	N/A	O/S
AY-102			O/S	None			N/A	
AZ-101				None			N/A	O/S
AZ-102					None		N/A	O/S
SY-101	(10)		None	None		O/S (9)	N/A	
SY-102			O/S (8)	None			N/A	
SY-103	X		O/S (8)	None		O/S (9)	N/A	
Totals: 28 tanks	5 Watch List Tanks	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0

TABLE D-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 28 TANKS
(Sheet 2 of 2)

Footnotes:

1. Some double-shell tanks have both FIC and manual tape which is used when the FIC is out of service. Noncompliance (N/C) will be shown when no readings are obtained. ENRAF gauges are being installed to replace FICs. The ENRAF gauges are being connected to TMACS, but some are currently being read manually.
2. Psychrometric readings are taken on an "as needed" basis. No psychrometric readings are currently being taken in the double-shell tanks.
3. OSD specifies double-shell tank temperature limits, gradients, etc.
4. Applicable OSD and HNF-IP-0842, latest revisions, are used as guidelines for monitoring Leak Detection Pits. See also (6) and (7) below.
5. AW-102 has ENRAF, FIC and M.T. At some point the FIC will be removed.
6. USQ TF-97-0038, dated April 28, 1997, specifies discontinuing the use of leak detection pit radiation monitoring equipment in all double-shell tank farms where the leak detection pits are used as tertiary leak detection. This applies to all double-shell tank farms.
7. Leak Detection Pit weekly readings are being obtained by Instrument Technicians in these tanks:
AP-103C (for tanks AP-101 - 104)
AP-105C (for tanks AP-105 - 108)
8. **SY-102 - Manual Tape has sporadic readings. ENRAF is primary device.**
SY-103 - Manual Tape has sporadic readings. ENRAF is primary device.
9. SY-101 - LDP readings are above normal range. EDL #S0007 to repair it.
SY-103 - LDP readings are above normal range. EDL #241-SY-95-5 to repair it.
10. SY-101 - was removed from the Hydrogen Watch List on January 11, 2001.

**TABLE D-6. ENRAF SURFACE LEVEL GAUGE INSTALLATION AND
DATA INPUT METHODS**
February 28, 2001

LEGEND											
SACS			= Surveillance Analysis Computer System								
TMACS			= Tank Monitor and Control System								
Auto			= Automatically entered into TMACS and electronically transmitted to SACS								
Manual			= Manually entered directly into SACS by surveillance personnel, from Field Data sheets								
EAST AREA						WEST AREA					
Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method
A-101	09/95	Auto	B-201	07/00	Auto	S-101	02/95	Auto	TX-101	11/95	Auto
A-102			B-202	07/00	Auto	S-102	05/95	Auto	TX-102	05/96	Auto
A-103	07/96	Auto	B-203	08/00	Auto	S-103	06/94	Auto	TX-103	12/95	Auto
A-104	05/96	Manual	B-204	06/00	Auto	S-104	05/99	Auto	TX-104	03/96	Auto
A-105			BX-101	04/96	Auto	S-105	07/95	Auto	TX-105	04/96	Auto
A-106	01/96	Auto	BX-102	06/96	Auto	S-106	06/94	Auto	TX-106	04/96	Auto
AN-101	08/96	Auto	BX-103	04/96	Auto	S-107	06/94	Auto	TX-107	04/96	Auto
AN-102	05/00	Auto	BX-104	05/96	Auto	S-108	07/95	Auto	TX-108	04/96	Auto
AN-103	08/95	Auto	BX-105	03/96	Auto	S-109	08/95	Auto	TX-109	11/95	Auto
AN-104	08/95	Auto	BX-106	07/94	Auto	S-110	08/95	Auto	TX-110	05/96	Auto
AN-105	08/95	Auto	BX-107	06/96	Auto	S-111	08/94	Auto	TX-111	05/96	Auto
AN-106	05/00	Auto	BX-108	05/96	Auto	S-112	05/95	Auto	TX-112	05/96	Auto
AN-107	04/00	Auto	BX-109	08/95	Auto	SX-101	04/95	Auto	TX-113	05/96	Auto
AP-101	06/99	Auto	BX-110	06/96	Auto	SX-102	04/95	Auto	TX-114	06/96	Auto
AP-102	08/99	Auto	BX-111	05/96	Auto	SX-103	04/95	Auto	TX-115	05/96	Auto
AP-103	08/99	Auto	BX-112	03/96	Auto	SX-104	05/95	Auto	TX-116	05/96	Auto
AP-104	07/99	Auto	BY-101			SX-105	05/95	Auto	TX-117	06/96	Auto
AP-105	08/99	Auto	BY-102	09/99	Auto	SX-106	08/94	Auto	TX-118	03/96	Auto
AP-106	08/99	Auto	BY-103	12/96	Auto	SX-107	09/99	Auto	TY-101	07/95	Auto
AP-107	08/99	Auto	BY-104			SX-108	09/99	Auto	TY-102	09/95	Auto
AP-108	08/99	Auto	BY-105			SX-109	09/98	Auto	TY-103	09/95	Auto
AW-101	08/95	Auto	BY-106			SX-110	09/99	Auto	TY-104	06/95	Auto
AW-102	05/96	Auto	BY-107			SX-111	09/99	Auto	TY-105	12/95	Auto
AW-103	05/96	Auto	BY-108			SX-112	09/99	Auto	TY-106	12/95	Auto
AW-104	01/96	Auto	BY-109			SX-113	09/99	Auto	U-101		
AW-105	06/96	Auto	BY-110	02/97	Manual	SX-114	09/99	Auto	U-102	01/96	Manual
AW-106	06/96	Auto	BY-111	02/99	Manual	SX-115	09/99	Manual	U-103	07/94	Auto
AX-101	09/95	Auto	BY-112			SY-101	07/94	Auto	U-104		
AX-102	09/98	Auto	C-101			SY-102	06/94	Auto	U-105	07/94	Auto
AX-103	09/95	Auto	C-102			SY-103	07/94	Auto	U-106	08/94	Auto
AX-104	10/96	Auto	C-103	08/94	Auto	T-101	05/95	Manual	U-107	08/94	Auto
AY-101	03/96	Auto	C-104	04/99	Manual	T-102	06/94	Auto	U-108	05/95	Auto
AY-102	01/98	Auto	C-105	05/96	Manual	T-103	07/95	Manual	U-109	07/94	Auto
AZ-101	08/96	Manual	C-106	02/96	Auto	T-104	12/95	Manual	U-110	01/96	Manual
AZ-102	11/00	Manual	C-107	04/95	Auto	T-105	07/95	Manual	U-111	01/96	Manual
B-101	07/00	Auto	C-108			T-106	07/95	Manual	U-112		
B-102	02/95	Auto	C-109			T-107	06/94	Auto	U-201		
B-103	07/00	Auto	C-110			T-108	10/95	Manual	U-202		
B-104	06/00	Auto	C-111			T-109	09/94	Manual	U-203	09/98	Manual
B-105	08/00	Auto	C-112	03/96	Manual	T-110	05/95	Auto	U-204	06/98	Manual
B-106	07/00	Auto	C-201			T-111	07/95	Manual			
B-107	06/00	Auto	C-202			T-112	09/95	Manual			
B-108	07/00	Auto	C-203			T-201					
B-109	08/00	Auto	C-204			T-202					
B-110	07/00	Auto				T-203					
B-111	07/00	Auto				T-204					
B-112	03/95	Auto									
Total East Area: 71						Total West Area: 77					

148 ENRAFs installed: 125 automatically entered into TMACS, 23 manually entered into SACS

TABLE D-7. TANK MONITOR AND CONTROL SYSTEM (TMACS)

February 28, 2001

Note: Indicated below are the number of tanks having at least one operating sensor monitored by TMACS.

Some tanks have more than one sensor: multiple sensors of the same type in a tank are not shown in the table (for example: 10 tanks in BY-Farm have at least one operating TC sensor and 3 tanks in BY-Farm have at least one operating RTD sensor).

Acceptance Testing Completed: Sensors Automatically Monitored by TMACS

EAST AREA Tank Farm	Temperatures		ENRAF Level Gauge	Pressure (b)	Hydrogen (c)	Gas Sample Flow
	Thermocouple Tree (TC)	Resistance Thermal Device (RTD)				
A-Farm (6 Tanks)	1		3		1	1
AN-Farm (7 Tanks)	7		7	7	3	3
AP-Farm (8 Tanks)			8			
AW-Farm (6 Tanks)	6		6		1	1
AX-Farm (4 Tanks)	3		4		1	
AY-Farm (2 Tanks)			2			
AZ-Farm (2 Tanks)						
B-Farm (16 Tanks)	1		16			
BX-Farm (12 Tanks)	11		12			
BY-Farm (12 Tanks)	10	3	2			
C-Farm (16 Tanks)	15 (f)	1	3	1		
TOTAL EAST AREA (91 Tanks)	54	4	63	8	6	5
WEST AREA						
S-Farm (12 Tanks)	12		12	1	3	1 (a)
SX-Farm (15 Tanks)	14		14	1	7	5 (a)
SY-Farm (3 Tanks) (a)	3		3	1	2	2
T-Farm (16 Tanks)	14	1	3 (d)		1	(e)
TX-Farm (18 Tanks)	13		18			
TY-Farm (6 Tanks)	6	3	6			
U-Farm (16 Tanks)	15		6	4	6	6
TOTAL WEST AREA (86 Tanks)	77	4	62	7	19	19
TOTALS (177 Tanks)	131	8	125	15	25	24

- (a) Tank SY-101 has 2 gas sample flow sensors plus 2 vent flow sensors, and 2 ENRAFs.
 (b) Each tank has two sensors (high and low range).
 (c) Each tank has two sensors (high and low range).
 (d) T-107 - Auto ENRAF O/S, manual readings taken daily
 (e) S, SX, and T-Farms - five gas sample flow sensors have been unhooked or removed. Will eventually use SHMS equipment on other tanks but none scheduled yet.
 (f) C-105 acromag needs replacing. Manual readings are taken weekly.

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APPENDIX E

**MISCELLANEOUS UNDERGROUND STORAGE TANKS
AND SPECIAL SURVEILLANCE FACILITIES**

**TABLE E-1. EAST AND WEST AREA MISCELLANEOUS UNDERGROUND STORAGE TANKS
AND SPECIAL SURVEILLANCE FACILITIES**

ACTIVE - still running transfers through the associated diversion boxes or pipeline encasements

February 28, 2001

<u>FACILITY</u>	<u>LOCATION</u>	<u>PURPOSE (receives waste from:)</u>	<u>(Gallons)</u>	<u>MONITORED BY</u>	<u>REMARKS</u>
EAST AREA					
241-A-302-A	A Farm	A-151 DB	675	SACS/ENRAF/Manually	Pumped to AW-105 7/00
241-ER-311	B Plant	ER-151, ER-152 DB	8506	SACS/ENRAF/Manually	
241-AX-152	AX Farm	AX-152 DB	563	SACS/MT	August 2000 water added to perform integrity test
241-AZ-151	AZ Farm	AZ-702 condensate	5306	SACS/ENRAF/TMACS	Volume changes daily - pumped to AZ-101 or AZ-102 as needed
241-AZ-154	AZ Farm		25	SACS/MT	
244-BX-TK/SMP	BX Complex	DCRT - Receives from several farms	18390	SACS/MT	Using Manual Tape for tank/sump, pumped 10/16/99 to 66.0 in. Sump O/S 2/5/01
244-A-TK/SMP	A Complex	DCRT - Receives from several farms	6830	MCS/SACS/WTF	WTF - pumped 3/99 to AP-108
A-350	A Farm	Collects drainage	270	MCS/SACS/WTF	WTF (uncorrected) pumped as needed
AR-204	AY Farm	Tanker trucks from various facilities	204	(a) DIP TUBE	Alarms on SACS-pumped to AP-108, 7/00
A-417	A Farm		12344	SACS/WTF	WTF (uncorrected) pumped 4/98
CR-003-TK/SUMP	C Farm	DCRT	2984	MT/ZIP CORD	Zip cord in sump O/S 3/11/96, water intrusion, 1/98
WEST AREA					
241-TX-302-C	TX Farm	TX-154 DB	155	SACS/ENRAF/Manually	
241-U-301-B	U Farm	U-151, U-152, U-153, U-252 DB	8030	SACS/ENRAF/Manually	Returned to service 12/30/93
241-UX-302-A	U Plant	UX-154 DB	3116	SACS/ENRAF/Manually	
241-S-304	S Farm	S-151 DB	130	SACS/ENRAF/Manually	Replaced S-302-A, 10/91; ENRAF installed 7/98
244-S-TK/SMP	S Farm	From original tanks to SY-102	14195	SACS/Manually	Sump not alarming.
244-TX-TK/SMP	TX Farm	From original tanks to SY-102	11387	SACS/Manually	WTF (uncorrected)
					MT - pumped PFP 241-Z tank D-5 to 244-TX DCRT on 11/22/00, level now 56.50"
Vent Station Catch Tank		Cross Country Transfer Line	371	SACS/Manually	MT

Total Active Facilities 18

(a) AR-204 was pumped down to 150 gal then valve was left on and 350 gal of water went back into tank.

LEGEND: DB - Diversion Box
DCRT - Double-Contained Receiver Tank
TK - Tank
SMP - Sump
PIC - Food Instrument Corporation measurement device
MT - Manual Tape
Zip Cord - surface level measurement device
WTF - Weight Time Factor - can be recorded as WTF, WTF (corrected), and Uncorrected WTF
SACS - Surveillance Automated Control System
MCS - Monitor and Control System
Manually - Not connected to any automated system
O/S - Out of Service
ENRAF - Surface Level Measuring Device

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TABLE E-2. EAST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

February 28, 2001

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	MONITORED	
				BY	REMARKS
216-BY-201	BY Farm	TBP Waste Line	Unknown	NM	(216-BY)
241-A-302-B	A Farm	A-152 DB	5720	SACS/MT	Isolated 1985, Project B-138 Interim Stabilized 1990, Rain intrusion
241-AX-151	N of PUREX	PUREX	Unknown	NM	Isolated 1985
241-B-301-B	B Farm	B-151, B-152, B-153, B-252 DB	22250	NM	Isolated 1985 (1)
241-B-302-B	B Farm	B-154 DB	4930	NM	Isolated 1985 (1)
241-BX-302-A	BX Farm	BR-152, BX-153, BXR-152, BYR-152 DB	840	NM	Isolated 1985 (1)
241-BX-302-B	BX Farm	BX-154 DB	1040	NM	Isolated 1985 (1)
241-BX-302-C	BX Farm	BX-155 DB	870	NM	Isolated 1985 (1)
241-C-301-C	C Farm	C-151, C-152, C-153, C-252 DB	10470	NM	Isolated 1985 (1)
241-CX-70	Hot Semi-	Transfer lines	Unknown	NM	Isolated, Decommission Project,
241-CX-72	Works	Transfer lines	850	NM	See Dwg H-2-95-501, 2/5/87
241-ER-311A	SW B Plant	ER-151 DB	Unknown	NM	Isolated
244-AR VAULT	A Complex	Between farms & B-Plant	Unknown	NM	Not actively being used. Systems activated for final clean-out.
244-BXR-TK/SMP-001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-002	BX Farm	Transfer lines	2180	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-003	BX Farm	Transfer lines	1810	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-011	BX Farm	Transfer lines	7100	NM	Interim Stabilization 1985 (1)
361-B-TANK	B Plant	Drainage from B-Plant	Unknown	NM	Interim Stabilization 1985 (1)

Total East Area inactive facilities 18

LEGEND: DB - Diversion Box
DCRT - Double-Contained Receiver Tank
MT - Manual Taps
SACS - Surveillance Automated Control System
TK - Tank
SMP - Sump
R - Usually denotes replacement
NM - Not Monitored

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

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TABLE E-3. WEST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

February 28, 2001

<u>FACILITY</u>	<u>LOCATION</u>	<u>RECEIVED WASTE FROM:</u>	<u>(Gallons)</u>	<u>MONITORED BY</u>	<u>REMARKS</u>
216-TY-201	E. of TY Farm	Supernate from T-112	Unknown	NM	Isolated
231-W-151-001	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
231-W-151-002	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
241-S-302	S Farm	240-S-151 DB	8376	SACS/ENRAF	Assumed Leaker EPDA 85-04
241-S-302-A	S Farm	241-S-151 DB	0		Assumed Leaker TF-EFS-90-042
Partially filled with grout 2/91, determined still assumed leaker after leak test. Manual FIC readings are unobtainable due to dry grouted surface.					
CASS monitoring system retired 2/23/99; intrusion readings discontinued. S-304 replaced S-302-A					
241-S-302-B	S Farm	S Encasements	Unknown	NM	Isolated 1985 (1)
241-SX-302	SX Farm	SX-151 DB, 151 TB	Unknown	NM	Isolated 1987
241-SX-304	SX Farm	SX-152 Transfer Box, SX-151 DB	Unknown	NM	Isolated 1985 (1)
241-T-301	T Farm	DB T-151, -151, -153, -252	Unknown	NM	Isolated 1985 (241-T-301B)
241-TX-302	TX Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TX-302-X-B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (1)
241-TX-302-B	TX Farm	TX-155 DB	1600	SACS/MT	New MT installed 7/16/93
241-TX-302-B(R)	E. of TX Farm	TX-155 DB	Unknown	NM	Isolated
241-TY-302-A	TY Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TY-302-B	TY Farm	TY Encasements	Unknown	NM	Isolated 1985 (1)
241-Z-8	E. of Z Plant	Recuplex waste	Unknown	NM	Isolated, 1974, 1975
242-T-135	T Evaporator	T Evaporator	Unknown	NM	Isolated
242-TA-R1	T Evaporator	Z Plant waste	Unknown	NM	Isolated
243-S-TK-1	N. of S Farm	Pers. Decon. Facility	Unknown	NM	Isolated
244-U-TK/SMP	U Farm	DCRT - Receives from several farms	Unknown	NM	Not yet in use
244-TXR VAULT	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
270-W	SE of U Plant	Condensate from U-221	Unknown	NM	Isolated 1970
361-T-TANK	T Plant	Drainage from T-Plant	Unknown	NM	Isolated 1985 (1)
361-U-TANK	U Plant	Drainage from U-Plant	Unknown	NM	Interim Stabilized, MT removed 1984 (1)

Total West Area inactive facilities 27

LEGEND:

- DB - Diversion Box, TB - Transfer Box
- DCRT - Double-Contained Receiver Tank
- TK - Tank
- SMP - Sump
- R - Usually denotes replacement
- FIC - Surface Level Monitoring Device
- MT - Manual Tape
- O/S - Out of Service
- SACS - Surveillance Automated Control System
- NM - Not Monitored
- ENRAF - Surface Level Monitoring Device

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

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APPENDIX F
LEAK VOLUME ESTIMATES

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (Sheet 1 of 5)

February 28, 2001

Tank Number	Date Declared Confirmed or Assumed Leaker (3)	Volume Gallons (2)	Associated KiloCuries 137 cs (10)	Interim Stabilized Date (11)	Leak Estimate	
					Updated	Reference
241-A-103	1987	5500 (8)		06/88	1987	(j)
241-A-104	1975	500 to 2500	0.8 to 1.8 (q)	09/78	1983	(a)(q)
241-A-105 (1)	1983	10000 to 277000	85 to 760 (b)	07/79	1991	(b)(c)
241-AX-102	1988	3000 (8)		09/88	1989	(h)
241-AX-104	1977	-- (8)		08/81	1989	(g)
241-B-101	1974	-- (8)		03/81	1989	(g)
241-B-103	1978	-- (8)		02/85	1989	(g)
241-B-105	1978	-- (8)		12/84	1989	(g)
241-B-107	1980	8000 (8)		03/85	1986	(d)(f)
241-B-110	1981	10000 (8)		03/85	1986	(d)
241-B-111	1978	-- (8)		06/85	1989	(g)
241-B-112	1978	2000		05/85	1989	(g)
241-B-201	1980	1200 (8)		08/81	1984	(e)(f)
241-B-203	1983	300 (8)		06/84	1986	(d)
241-B-204	1984	400 (8)		06/84	1989	(g)
241-BX-101	1972	-- (8)		09/78	1989	(g)
241-BX-102	1971	70000	50 (l)	11/78	1986	(d)
241-BX-108	1974	2500	0.5 (l)	07/79	1986	(d)
241-BX-110	1976	-- (8)		08/85	1989	(g)
241-BX-111	1984 (13)	-- (8)		03/95	1993	(g)
241-BY-103	1973	<5000		11/97	1983	(a)
241-BY-105	1984	-- (8)		N/A	1989	(g)
241-BY-106	1984	-- (8)		N/A	1989	(g)
241-BY-107	1984	15100 (8)		07/79	1989	(g)
241-BY-108	1972	<5000		02/85	1983	(a)
241-C-101	1980	20000 (8)(10)		11/83	1986	(d)
241-C-110	1984	2000		05/95	1989	(g)
241-C-111	1988	5500 (8)		03/84	1989	(g)
241-C-201 (4)	1988	550		03/82	1987	(i)
241-C-202 (4)	1988	450		08/81	1987	(i)
241-C-203	1984	400 (8)		03/82	1986	(d)
241-C-204 (4)	1988	350		08/82	1987	(i)
241-S-104	1988	24000 (8)		12/84	1989	(g)
241-SX-104	1988	6000 (8)		04/00	1988	(k)
241-SX-107	1984	<5000		10/79	1983	(a)
241-SX-108 (5)(14)	1982	2400 to 35000	17 to 140 (m)(q)(t)	08/79	1991	(m)(q)(t)
241-SX-109 (5)(14)	1965	<10000	<40 (n)(t)	05/81	1992	(n)(t)
241-SX-110	1976	5500 (8)		08/79	1989	(g)
241-SX-111 (14)	1974	500 to 2000	0.6 to 2.4 (l)(q)(t)	07/79	1986	(d)(q)(t)
241-SX-112 (14)	1969	30000	40 (l)(t)	07/79	1986	(d)(t)
241-SX-113	1982	15000	8 (l)	11/78	1986	(d)
241-SX-114	1972	-- (8)		07/79	1989	(g)
241-SX-115	1965	50000	21 (o)	09/78	1992	(o)
241-T-101	1992	7500 (8)		04/83	1992	(p)
241-T-103	1974	<1000 (8)		11/83	1989	(g)
241-T-106	1973	115000 (8)	40 (l)	08/81	1986	(d)
241-T-107	1984	-- (8)		05/86	1989	(g)
241-T-108	1974	<1000 (8)		11/78	1980	(f)
241-T-109	1974	<1000 (8)		12/84	1989	(g)
241-T-111	1979, 1994 (12)	<1000 (8)		02/95	1994	(f)(r)
241-TX-105	1977	-- (8)		04/83	1989	(g)
241-TX-107 (5)	1984	2500		10/79	1986	(d)
241-TX-110	1977	-- (8)		04/83	1989	(g)
241-TX-113	1974	-- (8)		04/83	1989	(g)
241-TX-114	1974	-- (8)		04/83	1989	(g)
241-TX-115	1977	-- (8)		09/83	1989	(g)
241-TX-116	1977	-- (8)		04/83	1989	(g)
241-TX-117	1977	-- (8)		03/83	1989	(g)
241-TY-101	1973	<1000 (8)		04/83	1980	(f)
241-TY-103	1973	3000	0.7 (l)	02/83	1986	(d)
241-TY-104	1981	1400 (8)		11/83	1986	(d)
241-TY-105	1980	35000	4 (l)	02/83	1986	(d)
241-TY-106	1959	20000	2 (l)	11/78	1986	(d)
241-U-101	1959	30000	20 (l)	09/79	1986	(d)
241-U-104	1961	55000	0.09 (l)	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (8)	0.05 (q)	12/84	1986	(d)(q)
241-U-112	1980	8500 (8)		09/79	1986	(d)
87 Tanks		<750,000 - 1,050,000 (7)				

N/A = not applicable (not yet interim stabilized)

TABLE F-1. SINGLE-SHELL LEAK VOLUME ESTIMATES
(Sheet 2 of 6)

Footnotes:

- (1) Current estimates [see reference(b)] are that 610 Kgallons of cooling water was added to Tank 241-A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with Dangerous Waste Regulations [Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington], any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated in accordance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 Kgallons to 277 Kgallons) is based on the following (see References):
1. Reference (b) contains an estimate of 5 Kgallons to 15 Kgallons for the initial leak prior to August 1968.
 2. Reference (b) contains an estimate of 5 Kgallons to 30 Kgallons for the leak while the tank was being sluiced from August 1968 to November 1970.
 3. Reference (b) contains an estimate of 610 Kgallons of cooling water added to the tank from November 1970 to December 1978 but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.
 4. Reference (c) contains an estimate the 378 to 410 Kgallons evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgallons of cooling water leakage from November 1970 to December 1978.
- | | <u>Low Estimate</u> | <u>High Estimate</u> |
|--------------------------------|---------------------|----------------------|
| Prior to August 1968 | 5,000 | 15,000 |
| August 1968 to November 1970 | 5,000 | 30,000 |
| November 1970 to December 1978 | <u>0</u> | <u>232,000</u> |
| Totals | 10,000 | 277,000 |
- (2) These leak volume estimates do not include (with some exceptions), such things as: (a) cooling/raw water leaks, (b) intrusions (rain infiltration) and subsequent leaks, (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.), and (d) leaks from catch tanks, diversion boxes, encasements, etc.
- (3) In many cases, a leak was suspected long before it was identified or confirmed. For example, reference (d) shows that Tank 241-U-104 was suspected of leaking in 1956. The leak was "confirmed" in 1961. This report lists the "assumed leaker" date of 1961. Using present standards, Tank 241-U-104 would have been declared an assumed leaker in 1956. In 1984, the criteria designations of "suspected leaker," "questionable integrity," "confirmed leaker," "declared leaker," "borderline" and "dormant," were merged into one category now reported as "assumed leaker." See reference (f) for explanation of when, how long, and how fast some of the tanks leaked. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 3 of 6)

- (4) The leak volume estimate date for these tanks is before the "declared leaker" date because the tank was in a "suspected leaker" or "questionable integrity" status; however, a leak volume had been estimated prior to the tank being reclassified.
- (5) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicating continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations.
- (6) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (9). For more details see reference (g). The total leak volume estimate for these tanks is 150 Kgallons (rounded to the nearest Kgallons), for an average of approximately 8 Kgallons for each of 19 tanks.
- (7) The total has been rounded to the nearest 50 Kgallons. Upper bound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.
- (8) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.
- (9) The curie content shown is as listed in the reference document and is not decayed to a consistent date; therefore, a cumulative total is inappropriate.
- (10) Tank 241-C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a "minimum heel" in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See references (q) and (r); refer to reference (s) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).
- (11) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.
- (12) Tank T-111 was declared an assumed re-leaker on February 28, 1994, due to a decreasing trend in surface level measurement. This tank was pumped, and interim stabilization completed on February 22, 1995.
- (13) Tank BX-111 was declared an assumed re-leaker in April 1993. Preparations for pumping were delayed, following an administrative hold placed on all tank farm operations in August 1993. Pumping resumed and the tank was declared interim stabilized on March 15, 1995.
- (14) The leak volume and curie release estimates on SX-108, SX-109, SX-111, and SX-112 have been re-evaluated using a Historical Leak Model [see reference (t)]. In general, the model estimates are much higher than the values listed in the table, both for volume and curies released. The values listed in the table do not reflect this revised estimate because, "In particular, it is worth emphasizing that this report was never meant to be a definitive update for the leak baseline at the Hanford Site. It was rather meant to be an attempt to view the issue of leak inventories with a new and different methodology." (This quote is from the first page of the referenced report).
- (15) In July 1998, the Washington State Department of Ecology (Ecology) directed the U. S. Department of Energy (DOE) to develop corrective action plans for eight single-shell tank farms (B/BX/BY/S/SX/T/TX/TY) where groundwater contamination likely originated from tank farm operations. A Tri-Party Agreement milestone (M-45 series) was developed that established a formalized approach for evaluating impacts on groundwater quality of losses of tank wastes to the vadose zone underlying these tank farms. Planning documents have been

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 4 of 6)

completed for the S, SX, B, BX, and BY tank farms and will be completed shortly for the T, TX, and TY farms. The phase 1 field investigation is near completion in the S and SX tank farms and has begun in the B, BX, and BY farms. Field work is anticipated in FY-02 for the T, TX, and TY tank farms. The remaining four single-shell tank farms are expected to be included in corrective action plans in the near future.

All of the information included in this appendix is currently under review and significant revisions are anticipated. Recently, major tank farm vadose zone investigation efforts (such as the baseline spectral gamma-ray logging of all drywells in all single-shell tank farms, as well as drilling and sampling in the SX tank farm) were completed. This appendix will be revised as a better understanding of past tank leak events is developed.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 5 of 6)

References:

- (a) Murthy, K.S., et al, June 1983, *Assessment of Single-Shell Tank Residual Liquid Issues at Hanford Site, Washington*, PNL-4688, Pacific Northwest Laboratory, Richland, Washington.
- (b) WHC, 1991a, *Tank 241-A-105 Leak Assessment*, WHC-MR-0264, Westinghouse Hanford Company, Richland, Washington.
- (c) WHC, 1991b, *Tank 241-A-105 Evaporation Estimate 1970 Through 1978*, WHC-EP-0410, Westinghouse Hanford Company, Richland, Washington.
- (d) Smith, D. A., January 1986, *Single-Shell Tank Isolation Safety Analysis Report*, SD-WM-SAR-006, Rev. 1, Westinghouse Hanford Company, Richland, Washington.
- (e) McCann, D. C., and T. S. Vail, September 1984, *Waste Status Summary*, RHO-RE-SR-14, Rockwell Hanford Operations, Richland, Washington.
- (f) Catlin, R. J., March 1980, *Assessment of the Surveillance Program of the High-Level Waste Storage Tanks at Hanford*, Hanford Engineering Development Laboratory, Richland, Washington.
- (g) Baumhardt, R. J., May 15, 1989, Letter to R. E. Gerton, U.S. Department of Energy-Richland Operations Office, *Single-Shell Tank Leak Volumes*, 8901832B R1, Westinghouse Hanford Company, Richland, Washington.
- (h) WHC, 1990a, Occurrence Report, *Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102*, WHC-UO-89-023-TF-05, Westinghouse Hanford Company, Richland, Washington.
- (i) Groth, D. R., July 1, 1987, Internal Memorandum to R. J. Baumhardt, *Liquid Level Losses in Tanks 241-C-201, -202 and -204*, 65950-87-517, Westinghouse Hanford Company, Richland, Washington.
- (j) Groth, D. R. and G. C. Owens, May 15, 1987, Internal Memorandum to J. H. Roecker, *Tank 103-A Integrity Evaluation*, Westinghouse Hanford Company, Richland, Washington.
- (k) Dunford, G. L., July 8, 1988, Internal Memorandum to R. K. Welty, *Engineering Investigation: Interstitial Liquid Level Decrease in Tank 241-SX-104*, 13331-88-416, Westinghouse Hanford Company, Richland, Washington.
- (l) ERDA, 1975, *Final Environmental Statement Waste Management Operations, Hanford Reservation, Richland, Washington*, ERDA-1538, 2 vols., U.S. Energy Research and Development Administration, Washington, D.C.
- (m) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington.
- (n) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington.
- (o) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 6 of 6)

- (p) WHC, 1992d, Occurrence Report, *Apparent Decrease in Liquid Level in Single Shell Underground Storage Tank 241-T-101, Leak Suspected; Investigation Continuing*, RL-WHC-TANKFARM-1992-0073, Westinghouse Hanford Company, Richland, Washington.
- (q) WHC, 1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington.
- (r) WHC, 1993a, *Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106*, WHC-SD-EN-TI-185, REV OA, Westinghouse Hanford Company, Richland, Washington.
- (s) WHC, 1994, Occurrence Report, *Apparent Liquid Level Decrease in Single Shell Underground Storage Tank 241-T-111; Declared an Assumed Re-Leaker*, RL-WHC-TANKFARM-1994-0009, Westinghouse Hanford Company, Richland, Washington.
- (t) HNF, 1998, Agnew, S. F. and R. A. Corbin, August 1998, *Analysis of SX Farm Leak Histories - Historical Leak Model*, (HLM), HNF-3233, Rev. 0, Los Alamos National Laboratory, Los Alamos, New Mexico

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APPENDIX G

**SINGLE-SHELL TANKS INTERIM STABILIZATION, AND
CONTROLLED, CLEAN AND STABLE (CCS) STATUS**

TABLE G -1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS (Sheet 1 of 3)

February 28, 2001

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
A-101	SOUND	N/A		C-101	ASMD LKR	11/83	AR	T-108	ASMD LKR	11/78	AR
A-102	SOUND	08/89	SN	C-102	SOUND	09/95	JET	T-109	ASMD LKR	12/84	AR
A-103	ASMD LKR	06/88	AR	C-103	SOUND	N/A		T-110	SOUND	01/00 (5)	JET
A-104	ASMD LKR	09/78	AR	C-104	SOUND	09/89	SN	T-111	ASMD LKR	02/95	JET
A-105	ASMD LKR	07/79	AR	C-105	SOUND	10/95	AR	T-112	SOUND	03/81	AR(2)(3)
A-106	SOUND	08/82	AR	C-106	SOUND	N/A		T-201	SOUND	04/81	AR (3)
AX-101	SOUND	N/A		C-107	SOUND	09/85	JET	T-202	SOUND	08/81	AR
AX-102	ASMD LKR	09/88	SN	C-108	SOUND	03/84	AR	T-203	SOUND	04/81	AR
AX-103	SOUND	08/87	AR	C-109	SOUND	11/83	AR	T-204	SOUND	08/81	AR
AX-104	ASMD LKR	08/81	AR	C-110	ASMD LKR	05/95	JET	TX-101	SOUND	02/84	AR
B-101	ASMD LKR	03/81	SN	C-111	ASMD LKR	03/84	SN	TX-102	SOUND	04/83	JET
B-102	SOUND	08/85	SN	C-112	SOUND	08/90	AR	TX-103	SOUND	08/83	JET
B-103	ASMD LKR	02/85	SN	C-201	ASMD LKR	03/82	AR	TX-104	SOUND	09/79	SN
B-104	SOUND	06/85	SN	C-202	ASMD LKR	08/81	AR	TX-105	ASMD LKR	04/83	JET
B-105	ASMD LKR	12/84	AR	C-203	ASMD LKR	03/82	AR	TX-106	SOUND	06/83	JET
B-106	SOUND	03/85	SN	C-204	ASMD LKR	09/82	AR	TX-107	ASMD LKR	10/79	AR
B-107	ASMD LKR	03/85	SN	S-101	SOUND	N/A		TX-108	SOUND	03/83	JET
B-108	SOUND	06/85	SN	S-102	SOUND	N/A		TX-109	SOUND	04/83	JET
B-109	SOUND	04/85	SN	S-103	SOUND	04/00	JET (8)	TX-110	ASMD LKR	04/83	JET
B-110	ASMD LKR	12/84	AR	S-104	ASMD LKR	12/84	AR	TX-111	SOUND	04/83	JET
B-111	ASMD LKR	06/85	SN	S-105	SOUND	09/88	JET	TX-112	SOUND	04/83	JET
B-112	ASMD LKR	05/85	SN	S-106	SOUND	02/01	JET (10)	TX-113	ASMD LKR	04/83	JET
B-201	ASMD LKR	08/81	AR (3)	S-107	SOUND	N/A		TX-114	ASMD LKR	04/83	JET
B-202	SOUND	06/85	AR(2)	S-108	SOUND	12/96	JET	TX-115	ASMD LKR	09/83	JET
B-203	ASMD LKR	06/84	AR	S-109	SOUND	N/A		TX-116	ASMD LKR	04/83	JET
B-204	ASMD LKR	06/84	AR	S-110	SOUND	01/97	JET	TX-117	ASMD LKR	03/83	JET
BX-101	ASMD LKR	09/78	AR	S-111	SOUND	N/A		TX-118	SOUND	04/83	JET
BX-102	ASMD LKR	11/78	AR	S-112	SOUND	N/A		TY-101	ASMD LKR	04/83	JET
BX-103	SOUND	11/83	AR(2)	SX-101	SOUND	N/A		TY-102	SOUND	09/79	AR
BX-104	SOUND	09/89	SN	SX-102	SOUND	N/A		TY-103	ASMD LKR	02/83	JET
BX-105	SOUND	03/81	SN	SX-103	SOUND	N/A		TY-104	ASMD LKR	11/83	AR
BX-106	SOUND	07/95	SN	SX-104	ASMD LKR	04/00	JET (7)	TY-105	ASMD LKR	02/83	JET
BX-107	SOUND	09/90	JET	SX-105	SOUND	N/A		TY-106	ASMD LKR	11/78	AR
BX-108	ASMD LKR	07/79	SN	SX-106	SOUND	05/00	JET (8)	U-101	ASMD LKR	09/79	AR
BX-109	SOUND	09/90	JET	SX-107	ASMD LKR	10/79	AR	U-102	SOUND	N/A	
BX-110	ASMD LKR	08/85	SN	SX-108	ASMD LKR	08/79	AR	U-103	SOUND	09/00	JET (9)
BX-111	ASMD LKR	03/95	JET	SX-109	ASMD LKR	05/81	AR	U-104	ASMD LKR	10/78	AR
BX-112	SOUND	09/90	JET	SX-110	ASMD LKR	08/79	AR	U-105	SOUND	N/A	
BY-101	SOUND	05/84	JET	SX-111	ASMD LKR	07/79	SN	U-106	SOUND	N/A	
BY-102	SOUND	04/95	JET	SX-112	ASMD LKR	07/79	AR	U-107	SOUND	N/A	
BY-103	ASMD LKR	11/97	JET	SX-113	ASMD LKR	11/78	AR	U-108	SOUND	N/A	
BY-104	SOUND	01/85	JET	SX-114	ASMD LKR	07/79	AR	U-109	SOUND	N/A	
BY-105	ASMD LKR	N/A		SX-115	ASMD LKR	09/78	AR	U-110	ASMD LKR	12/84	AR
BY-106	ASMD LKR	N/A		T-101	ASMD LKR	04/83	SN	U-111	SOUND	N/A	
BY-107	ASMD LKR	07/79	JET	T-102	SOUND	03/81	AR(2)(3)	U-112	ASMD LKR	09/79	AR
BY-108	ASMD LKR	02/85	JET	T-103	ASMD LKR	11/83	AR	U-201	SOUND	08/79	AR
BY-109	SOUND	07/97	JET	T-104	SOUND	11/99 (4)	JET	U-202	SOUND	08/79	SN
BY-110	SOUND	01/85	JET	T-105	SOUND	06/87	AR	U-203	SOUND	08/79	AR
BY-111	SOUND	01/85	JET	T-106	ASMD LKR	08/81	AR	U-204	SOUND	08/79	SN
BY-112	SOUND	06/84	JET	T-107	ASMD LKR	06/86	JET				

LEGEND:

AR = Administratively interim stabilized

JET = Saltwell jet pumped to remove drainable interstitial liquid

SN = Supernate pumped (Non-Jet pumped)

N/A = Not yet interim stabilized

ASMD LKR = Assumed Leaker

Interim Stabilized Tanks	126
Not Yet Interim Stabilized	23
Total Single-Shell Tanks	149

TABLE G-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS
(sheet 2 of 3)

Footnotes:

- (1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.
- (2) Although tanks, BX-103, T-102 and T-112 met the interim stabilization administrative procedure at the time they were stabilized, they no longer meet the recently updated administrative procedure. The tanks were re-evaluated in 1996 and memo 9654456, J. H. Wicks to Dr. J. K. McClusky, DOE-RL, dated September 1996, was issued which recommended that no further pumping be performed on these tanks, based on an economic evaluation.

Document RPP-5556, Rev. 0, "Updated Drainable Interstitial Liquid Volume Estimates for 119 Single-Shell Tanks Declared Stabilized," J. G. Field, February 7, 2000, states that five tanks no longer meet the stabilization criteria (BX-103, T-102, and T-112 exceed the supernate criteria, and BY-103 and C-102 exceed the DIL criteria).

An intrusion investigation was completed on tank B-202 in 1996 because of a detected increase in surface level. As a result of this investigation, it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks.

- (3) Original Interim Stabilization data are missing on four tanks: B-201, T-102, T-112, and T-201. Document HNF-SD-RE-TI-178, Rev. 7, dated February 9, 2001, added three additional tanks to those missing stabilization data: A-104, BX-101, and SX-115.
- (4) Tank 241-T-104 was Interim Stabilized on November 19, 1999. In-tank video taken October 7, 1999, shows the surface is clearly sludge-type waste with no saltcake present. No visible water on surface. Waste surface appears level across tank with numerous cracks. There is a minimal collapsed area around the saltwell screen, with no visible bottom.
- (5) Tank 241-T-110 was Interim Stabilized on January 5, 2000, due to major equipment failure. An in-tank video taken October 7, 1999 (pumping was discontinued on August 12, 1999), showed the surface of this tank as smooth, brown-tinted sludge with visible cracks.
- (6) Tank 241-S-103 was declared Interim Stabilized April 18, 2000. The surface is a rough, black and brown-colored waste with yellow patches of saltcake visible throughout. The surface appears to be damp but not saturated, and shows irregular cracking typically seen with surfaces beginning to dry out. A pool of supernatant liquid (10 feet in diameter, 5 feet deep, 1.0 Kgallons) is visible from video observations.
- (7) Tank 241-SX-104 was declared Interim Stabilized April 26, 2000, due to major equipment failure. The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the surface dried out. The waste surface appears to be dry and shows no standing water within the tank.
- (8) Tank 241-SX-106 was declared Interim Stabilized May 5, 2000. The surface is a smooth, white-colored saltcake waste. The surface level slopes slightly from the tank sidewall down to a large depression in the center of the tank. A second depression surrounds both saltwell screens and an abandoned LOW. The waste surfaces appear dry and show no standing water within the tank.

TABLE G-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS
(sheet 3 of 3)

- (9) Tank 241-U-103 was declared Interim Stabilized September 11, 2000. The surface is a brown colored waste with irregular patches of white salt crystal. Approximately 30% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to the first of two depressions in the center of the tank. The waste surface appears dry and shows signs of drying and cracking due to saltwell pumping. LOW readings indicate an average adjusted ILL of 60.2 inches. There is a small pool of supernatant liquid estimated to be 500 gallons.
- (10) Tank 241-S-106 was declared Interim Stabilized on February 1, 2001. The surface is a rough, brown and yellow-colored saltcake waste with an irregular surface of mounds and saltcake crystals that were created as the surface was dried out. The waste surface appears to be dry and shows no standing water within the tank. There is no evidence of supernatant liquid from video observations. The waste surface slopes gradually from the tank sidewall to the depression in the center of the tank. The depression surrounds both of the saltwell screens, but does not extend around the temperature probe and ENRAF devices.

TABLE G-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES

February 28, 2001

(sheet 1 of 2)

New single-shell tank interim stabilization milestones were negotiated in 1999 and are identified in the "Consent Decree." The Consent Decree was approved on August 16, 1999.

CONSENT DECREE
Attachments A-1 and A-2

Following is the schedule for pumping liquid waste from the remaining twenty-nine (29) single-shell tanks. This schedule is enforceable pursuant to the terms of the Decree except for the "Project Pumping Completion Dates," which are estimates only and not enforceable. (Note: Schedule does not include C-106)

Tank Designation	Projected Pumping Start Date	Actual Pumping Start Date	Projected Pumping Completion Date	Interim Stabilization Date
1. T-104	Already initiated	March 24, 1996	May 30, 1999	November 19, 1999
2. T-110	Already initiated	May 12, 1997	May 30, 1999	January 5, 2000
3. SX-104	Already initiated	September 26, 1997	December 30, 2000	April 26, 2000
4. SX-106	Already initiated	October 6, 1998	December 30, 2000	May 5, 2000
5. S-102	July 31, 1999	March 18, 1999	March 30, 2001	
6. S-106	July 31, 1999	April 16, 1999	March 30, 2001	February 1, 2001
7. S-103	July 31, 1999	June 4, 1999	March 30, 2001	April 18, 2000
8. U-103*	June 15, 2000	September 26, 1999	April 15, 2002	September 11, 2000
9. U-105*	June 15, 2000	December 10, 1999	April 15, 2002	
10. U-102*	June 15, 2000	January 20, 2000	April 15, 2002	
11. U-109*	June 15, 2000	March 11, 2000	April 15, 2002	
12. A-101	October 30, 2000	May 6, 2000	September 30, 2003	
13. AX-101	October 30, 2000	July 29, 2000	September 30, 2003	
14. SX-105	March 15, 2001	August 8, 2000	February 28, 2003	
15. SX-103	March 15, 2001	October 26, 2000	February 28, 2003	
16. SX-101	March 15, 2001	November 22, 2000	February 28, 2003	
17. U-106*	March 15, 2001	August 24, 2000	February 28, 2003	
18. BY-106	July 15, 2001		June 30, 2003	
19. BY-105	July 15, 2001		June 30, 2003	
20. U-108	December 30, 2001		August 30, 2003	
21. U-107	December 30, 2001		August 30, 2003	
22. S-111	December 30, 2001		August 30, 2003	
23. SX-102	December 30, 2001		August 30, 2003	
24. U-111	November 30, 2002		September 30, 2003	
25. S-109	November 30, 2002	September 23, 2000	September 30, 2003	
26. S-112	November 30, 2002		September 30, 2003	
27. S-101	November 30, 2002		September 30, 2003	
28. S-107	November 30, 2002		September 30, 2003	
29. C-103	No later than December 30, 2000, DOE will determine whether the organic layer and pumpable liquids will be pumped from this tank together or separately, and will establish a deadline for initiating pumping of this tank. The parties will incorporate the initiation deadline into this schedule as provided in Section VI of the Decree. ORP issued a letter to WDOE on December 22, 2000, meeting the requirements of this milestone.			

* Tanks containing organic complexants.

TABLE G-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES
(sheet 2 of 2)

Completion of Interim Stabilization. DOE will complete interim stabilization of all 29 single-shell tanks listed above by September 30, 2004.

Percentage of Pumpable Liquid Remaining to be Removed:

93% of Total Liquid	9/30/1999 (1)
38% of Organic Complexed Pumpable Liquids	9/30/2000 (2)
5% of Organic Complexed Pumpable Liquids	9/30/2001
18% of Total Liquid	9/30/2002
2% of Total Liquid	9/30/2003

The "percentage of pumpable liquid remaining to be removed" is calculated by dividing the volume of pumpable liquid remaining to be removed from tanks not yet interim stabilized by the sum of the total amount of liquid that has been pumped and the pumpable liquid that remains to be pumped from all tanks.

- (1) The Pumpable Liquid Remaining was reduced to 88%, by 9/30/99, exceeding this milestone. Reference LMHC-9957926 R1, D. I. Allen, LHMC RPP to D. C. Bryson, DOE-OPP, dated October 26, 1999
- (2) The Complexed Pumpable Liquid Remaining was reduced to 38%, by 9/15/00. Reference CHG-0004752, R. F. Wood, CHG, to J. J. Short, DOE-RPP, dated September 13, 2000.

TABLE G-3. SINGLE-SHELL TANKS STABILIZATION STATUS SUMMARY

February 28, 2001

Partial Interim Isolated (PI)		Intrusion Prevention Completed (IP)		Interim Stabilized (IS)	
<u>EAST AREA</u>		<u>EAST AREA</u>	<u>WEST AREA</u>	<u>EAST AREA</u>	<u>WEST AREA</u>
A-101		A-103	S-104	A-102	S-103
A-102		A-104	S-105	A-103	S-104
		A-105		A-104	S-105
AX-101		A-106	SX-107	A-105	S-106
			SX-108	A-106	S-108
BY-102		AX-102	SX-109		S-110
BY-103		AX-103	SX-110	AX-102	
BY-105		AX-104	SX-111	AX-103	SX-104
BY-106			SX-112	AX-104	SX-106
BY-109		B-FARM - 16 tanks	SX-113		SX-107
		BX-FARM - 12 tanks	SX-114	B-FARM - 16 tanks	SX-108
			SX-115	BX-FARM - 12 tanks	SX-109
C-103		BY-101			SX-110
C-105		BY-104	T-102	BY-101	SX-111
C-106		BY-107	T-103	BY-102	SX-112
East Area	11	BY-108	T-105	BY-103	SX-113
<u>WEST AREA</u>		BY-110	T-106	BY-104	SX-114
S-101		BY-111	T-108	BY-107	SX-115
S-102		BY-112	T-109	BY-108	
S-103			T-112	BY-109	T-Farm - 16 tanks
S-106		C-101	T-201	BY-110	TX-FARM - 18 tanks
S-107		C-102	T-202	BY-111	TY-FARM - 6 tanks
S-108		C-104	T-203	BY-112	
S-109		C-107	T-204		
S-110		C-108		C-101	U-101
S-111		C-109	TX-FARM - 18 tanks	C-102	U-103
S-112		C-110	TY-FARM - 6 tanks	C-104	U-104
		C-111		C-105	U-110
SX-101		C-112	U-101	C-107	U-112
SX-102		C-201	U-104	C-108	U-201
SX-103		C-202	U-112	C-109	U-202
SX-104		C-203	U-102	C-110	U-203
SX-105		C-204	U-202	C-111	U-204
SX-106		East Area	U-203	C-112	West Area
			U-204	C-201	65
				C-202	Total
				C-203	126
				C-204	
				East Area	80
T-101					
T-104					
T-107					
T-110					
T-111					
U-102		<u>Controlled, Clean, and Stable (CCS)</u>			
U-103					
U-105		<u>EAST AREA</u>	<u>WEST AREA</u>		
U-106		BX-FARM - 12 Tanks	TX-FARM - 18 tanks		
U-107			TY FARM - 6 tanks		
U-108		East Area	West Area		
U-109		12	24		
U-110			Total		
U-111			36		
West Area	29	Note: CCS activities have been deferred until funding is available.			
Total	40				

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APPENDIX H
TANKS AND EQUIPMENT CODE AND
STATUS DEFINITIONS

TABLE H - 1. TANK AND EQUIPMENT CODE/STATUS DEFINITIONS
February 28, 2001

1. TANK STATUS CODES

WASTE TYPE (also see definitions, section 2 below)

AW	Aging Waste (Neutralized Current Acid Waste [NCAW])
CC	Complexant Concentrate Waste
CP	Concentrated Phosphate Waste
DC	Dilute Complexed Waste
DN	Dilute Non-Complexed Waste
DSS	Double-Shell Slurry
DSSF	Double-Shell Slurry Feed
NCPLX	Non-Complexed Waste
PD	Plutonium-Uranium Extraction (PUREX) Neutralized Cladding Removal Waste (NCRW), transuranic waste (TRU)

TANK USE (DOUBLE-SHELL TANKS ONLY)

CWHT	Concentrated Waste Holding Tank
DRCVR	Dilute Receiver Tank
EVFD	Evaporate Feed Tank
SRCVR	Slurry Receiver Tank

2. DEFINITIONS

WASTE TANKS - GENERAL

Waste Tank Safety Issue

A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition.

Watch List Tank

An underground storage tank containing waste that requires special safety precautions because it may have a serious potential for release of high level radioactive waste because of uncontrolled increases in temperature or pressure. Special restrictions have been placed on these tanks by "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510, (also known as the Wyden Amendment).

Characterization

Characterization is understanding the Hanford tank waste chemical, physical, and radiological properties to the extent necessary to insure safe storage and interim operation, and ultimate disposition of the waste.

WASTE TYPES

Aging Waste (AW)

High level, first cycle solvent extraction waste from the PUREX plant (NCAW)

Concentrated Complexant (CC)

Concentrated product from the evaporation of dilute complexed waste.

Concentrated Phosphate Waste (CP)

Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste.

Dilute Complexed Waste (DC)

Characterized by a high content of organic carbon including organic complexants: ethylenediaminetetraacetic acid (EDTA), citric acid, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), being the major complexants used. Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs).

Dilute Non-Complexed Waste (DN)

Low activity liquid waste originating from T and S Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernate).

Double-Shell Slurry (DSS)

Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.

Double-Shell Slurry Feed (DSSF)

Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.

Non-complexed (NCPLX)

General waste term applied to all Hanford Site (NCPLX) liquors not identified as complexed.

PUREX Decladding (PD)

PUREX Neutralized Cladding Removal Waste (NCRW) is the solids portion of the PUREX plant neutralized cladding removal waste stream; received in Tank Farms as a slurry. NCRW solids are classified as transuranic (TRU) waste.

Drainable Interstitial Liquid (DIL)

Interstitial liquid that is not held in place by capillary forces, and will therefore migrate or move by gravity. (See also Section 4 below)

Supernate

The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks. (See also Section 4 below)

Ferrocyanide

A compound of iron and cyanide commonly expressed as FeCN . The actual formula for the ferrocyanide anion is $[\text{Fe}(\text{CN})_6]^{-4}$.

INTERIM STABILIZATION (Single-Shell Tanks only)

Interim Stabilized (IS)

A tank which contains less than 50 Kgallons of drainable interstitial liquid and less than 5 Kgallons of supernatant liquid. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow or saltwell screen inflow must also have been at or below 0.05 gpm before interim stabilization criteria is met.

Jet Pump

The jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down-hole jet assembly, 3) flexible or rigid transfer jumpers, 4) a flush line, and 5) a flowmeter. The jumpers contain piping, valves, and pressure and limit switches.

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber. The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle, lifting power fluid, and interstitial liquid to the pump pit. Pumping rates vary from 0.05 gallons to about 4 gpm.

Saltwell Screen

The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system will extend through the tank waste to near the bottom of the tank. The saltwell screen portion of the casing is an approximately 10-foot length of 300 Series, 10-inch diameter, stainless steel pipe with screen openings (slots) of 0.05 inches.

Emergency Pumping Trailer

A 45-foot tractor-type trailer is equipped to provide storage space and service facilities for emergency pumping equipment: this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid-mounted Weight Factor Instrument Enclosure (WFIE) with an air compressor and electronic recording instruments. The skid also contains a power control station for the pumps, pump pit leak detection, and instrumentation. A rack for over 100 feet of overground double-contained piping is also in the trailer.

INTRUSION PREVENTION (ISOLATION) Single-Shell Tanks only

Partially Interim Isolated (PI)

The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)

The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. In June 1993, Interim Isolation was replaced by Intrusion Prevention.

Intrusion Prevention (IP)

Intrusion Prevention is the administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump).

Controlled, Clean, and Stable (CCS)

Controlled, Clean, and Stable reflects the completion of several objectives: "Controlled" - provide remote monitoring for required instrumentation and implement controls required in the TWRS Authorization Basis; "Clean" - remove surface soil contamination and downpost the Tank Farms to RBA/URMA/RA radiological control status, remove abandoned equipment, and place reusable equipment in compliant storage; and "Stable" - remove pumpable liquids from the SSTs and IMUSTs and isolate the tanks.

TANK INTEGRITY

Sound

The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.

Assumed Leaker

The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

Assumed Re-Leaker

A condition that exists after a tank has been declared as an "assumed leaker" and then the surveillance data indicates a new loss of liquid attributed to a breach of integrity.

TANK INVESTIGATION

Intrusion

A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

Drywells

Historically, the drywells were monitored with gross logging tools as part of a secondary leak monitoring system. In some cases, neutron-moisture sensors were used to monitor moisture in the soil as a function of well depth, which could be indicative of tank leakage. The routine gross gamma logging data were stored electronically from 1974 through 1994. The routine gross gamma logging program ended in 1994. A program was initiated in 1995 to log each of the available drywells in each tank farm with a spectral gamma logging system. The spectral gamma logging system provides quantitative values for gamma-emitting radionuclides. The baseline spectral gamma logging database is available electronically.

Repeat spectral drywell scans are not part of the established Tank Farm leak detection program, but can be run on request if special needs arise. A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface.

Laterals

Laterals are horizontal drywells positioned under single-shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage. These drywells can be monitored by radiation detection probes. Laterals are 4-inch inside diameter steel pipes located 8 to 10 feet below the tank's concrete base. There are three laterals per tank. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use.

Surface Levels

The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes, and recorded and transmitted or entered into the Surveillance Analysis Computer System (SACS).

Automatic FIC

An automatic waste surface level measurement device is manufactured by the Food Instrument Company (FIC). The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape, a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and until February 1999, the majority of the FICs transmitted readings to the CASS. Since CASS retirement, all FIC gauges are read manually. FICs are being replaced by ENRAF detectors (see below).

ENRAF 854 ATG Level Detector

FICs and some manual tapes are in the process of being replaced by the ENRAF ATG 854 level detector. The ENRAF gauge, fabricated by ENRAF Incorporated, determines waste level by detecting variations in the weight of a displacer suspended in the tank waste. The displacer is connected to a wire wound onto a precision measuring drum. A level causes a change in the weight of the displacer which will be detected by the force transducer. Electronics within the gauge causes the servo motor to adjust the position of the displacer and compute the tank level based on the new position of the displacer drum. The gauge displays the level in decimal inches. The first few ENRAFs that received remote reading capability transmit liquid level data via analog output to the Tank Monitor and Control System (TMACS). The remaining ENRAFs and future installations will transmit digital level data to TMACS via an ENRAF Computer Interface Unit (CIU). The CIU allows fully remote communication with the gauge, minimizing tank farm entry.

Annulus

The annulus is the space between the inner and outer shells on DSTs only. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. The annulus conductivity probes and radiation detectors are the primary means of leak detection for all DSTs.

Liquid Observation Well (LOW)

In-tank liquid observation wells are used for monitoring the interstitial liquid level (ILL) in single-shell waste storage tanks. The wells are usually constructed of fiberglass or TEFZEL-reinforced epoxy-polyester resin (TEFZEL, a trademark of E. I. du Pont de Nemours & Company). There are a few LOWs constructed of steel. LOWs are sized to extend to within 1 inch of the bottom of the waste tank, are sealed at their bottom ends and have a nominal outside diameter of 3.5 inches. Two probes are used to monitor changes in the ILL; gamma and neutron, which can indicate intrusions or leakage by increases or decreases in the ILL. There are 65 LOWs (64 are in operation) installed in SSTs that contain or are capable of containing greater than 50 Kgallons of drainable interstitial liquid, and in two DSTs only. The LOWs installed in two DSTs, (SY-102 and AW-103 tanks), are used for special, rather than routine, surveillance purposes only.

Thermocouple (TC)

A thermocouple is a thermoelectric device used to measure temperature. More than one thermocouple on a device (probe) is called a thermocouple tree. In DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only, there are thermocouple elements installed in the insulating concrete, the lower primary tank knuckle, the secondary tank concrete foundation, and in the outer structural concrete.

These monitor temperature gradients within the concrete walls, bottom of the tank, and the domes. In SSTs, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single thermocouple (probe) may be installed in a riser, or lowered down an existing riser or LOW. There are also four thermocouple laterals beneath Tank 105-A in which temperature readings are taken in 34 thermocouples.

In-tank Photographs and Videos

In-tank photographs and videos may be taken to aid in resolving in-tank measurement anomalies and determine tank integrity. Photographs and videos help determine sludge and liquid levels by visual examination.

TERMS/ACRONYMS

CCS Controlled, Clean and Stable (tank farms)

<u>FSAR</u>	Final Safety Analysis Report (replaces BIOS, effective October 18, 1999)
<u>II</u>	Interim Isolated
<u>IP</u>	Intrusion Prevention Completed
<u>IS</u>	Interim Stabilized
<u>MT/FIC/ENRAF</u>	Manual Tape, Food Instrument Corporation, ENRAF Corporation (surface level measurement devices)
<u>OSD</u>	Operating Specifications Document
<u>PI</u>	Partial Interim Isolated
<u>SAR</u>	Safety Analysis Reports
<u>SHMS</u>	Standard Hydrogen Monitoring System
<u>TMACS</u>	Tank Monitor and Control System
<u>TPA</u>	Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," Fourth Amendment, 1994 (Tri-Party Agreement)
<u>TSR</u>	Technical Safety Requirements
<u>USQ</u>	Unreviewed Safety Question

Wyden Amendment "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the National Defense Authorization Act for Fiscal Year 1991, November 5, 1990, Public Law 101-510.

3. INVENTORY AND STATUS BY TANK – COLUMN VOLUME CALCULATIONS AND DEFINITIONS FOR TABLE A-6 (SINGLE-SHELL TANKS)

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Total Waste	<u>Solids volume plus Supernatant liquid.</u> Solids include sludge and saltcake (see definitions below).
Supernate (1)	<u>May be either measured or estimated.</u> Supernate is either the estimated or measured liquid floating on the surface of the waste or under a floating solids crust. In-tank photographs or videos are useful in estimating the liquid volumes; liquid floating on solids and core sample data are useful in estimating large liquid pools under a floating crust.
Drainable Interstitial Liquid (DIL) (1)	<u>This is initially calculated.</u> Drainable interstitial liquid is calculated based on the saltcake and sludge volumes, using calculated porosity values from past pumping or actual data for each tank. Interstitial liquid is liquid that fills the interstitial spaces of the solids waste. The sum of the interstitial liquid contained in saltcake and sludge minus an adjustment for capillary height is the initial volume of drainable interstitial liquid.

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Pumped This Month	<u>Net total gallons of liquid pumped from the tank during the month.</u> If supernate is present, pump production is first subtracted from the supernatant volume. The remainder is then subtracted from the drainable interstitial liquid volume.
Total Pumped (1)	<u>Cumulative net total gallons of liquid pumped from 1979 to date.</u>
Drainable Liquid Remaining (DLR) (1)	<u>Supernate plus Drainable Interstitial Liquid.</u> The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernate.
Pumpable Liquid Remaining (PLR) (1)	<u>Drainable Liquid Remaining minus unpumpable volume.</u> Not all drainable interstitial liquid is pumpable.
Sludge	<u>Solids formed during sodium hydroxide additions to waste.</u> Sludge usually was in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs or videos may be used to estimate the volume.
Saltcake	<u>Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator.</u> If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs or videos may be used to estimate the saltcake volume.
Solids Volume Update	<u>Indicates the latest update of any change in the solids volume.</u>
Solids Update Source - See Footnote	<u>Indicates the source or basis of the latest solids volume update.</u>
Last In-tank Photo	<u>Date of last in-tank photographs taken.</u>
Last In-tank Video	<u>Date of last in-tank video taken.</u>
See Footnotes for These Changes	<u>Indicates any change made the previous month.</u> A footnote explanation for the change follows the Inventory and Status by Tank Appendix (Table E-6).

- (1) As pumping continues, supernate, DIL, DLR, PLR, and total gallons pumped are adjusted accordingly based on actual pump volumes.

APPENDIX I

**TANK FARM CONFIGURATION, STATUS
AND FACILITIES CHARTS**

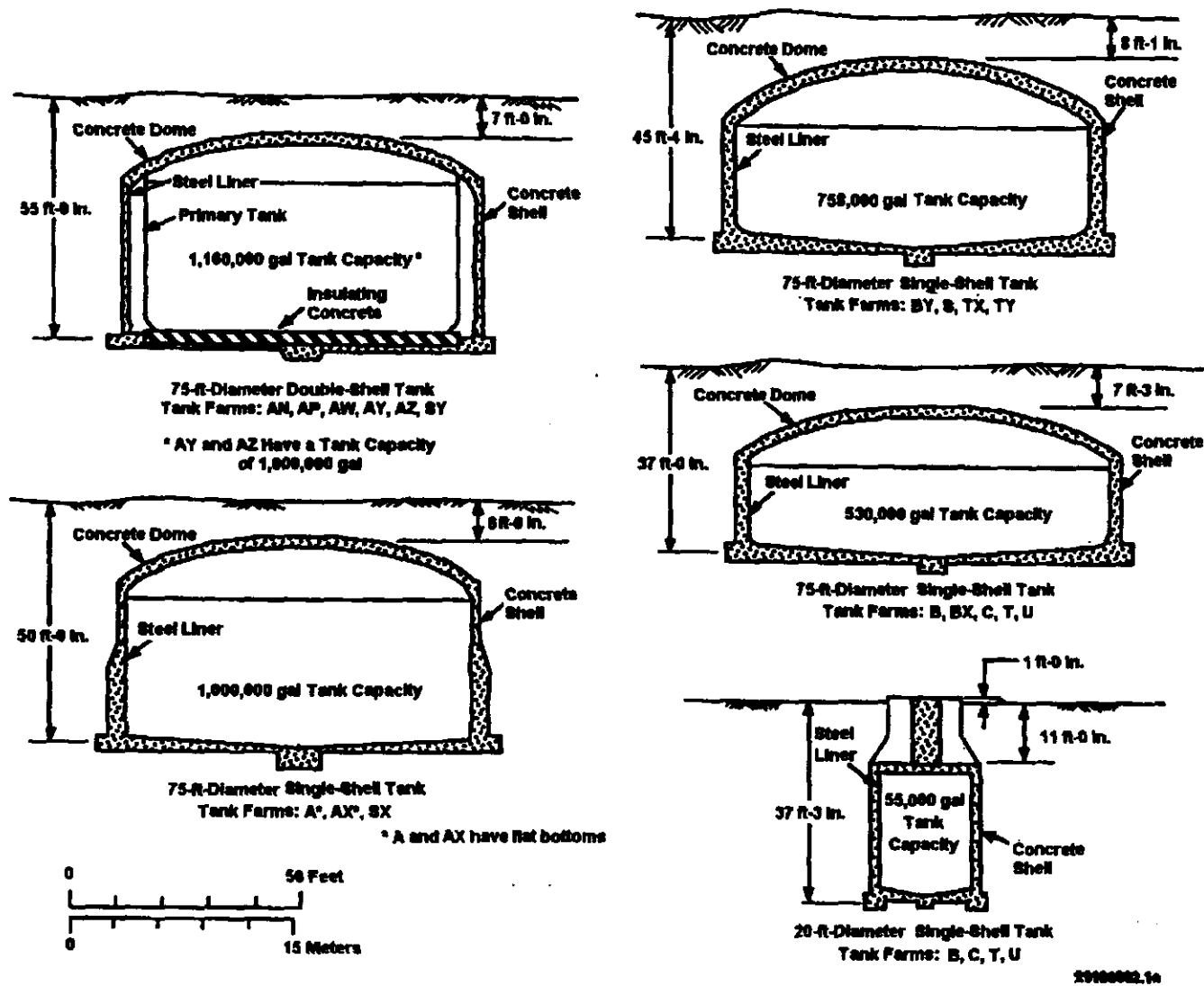


Figure I-1. High-Level Waste Tank Configuration

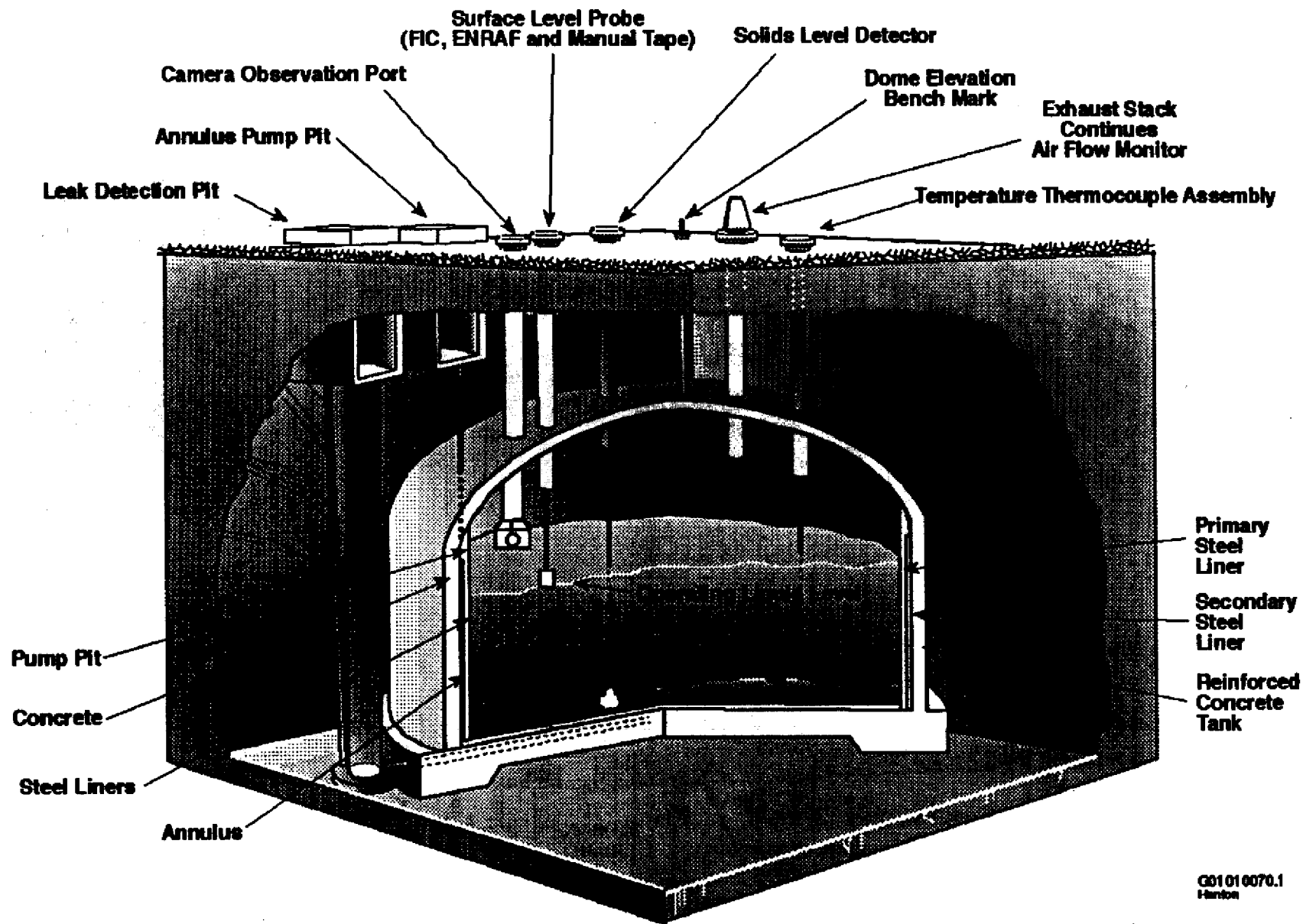


Figure I-2. Double-Shell Tank Instrumentation Configuration

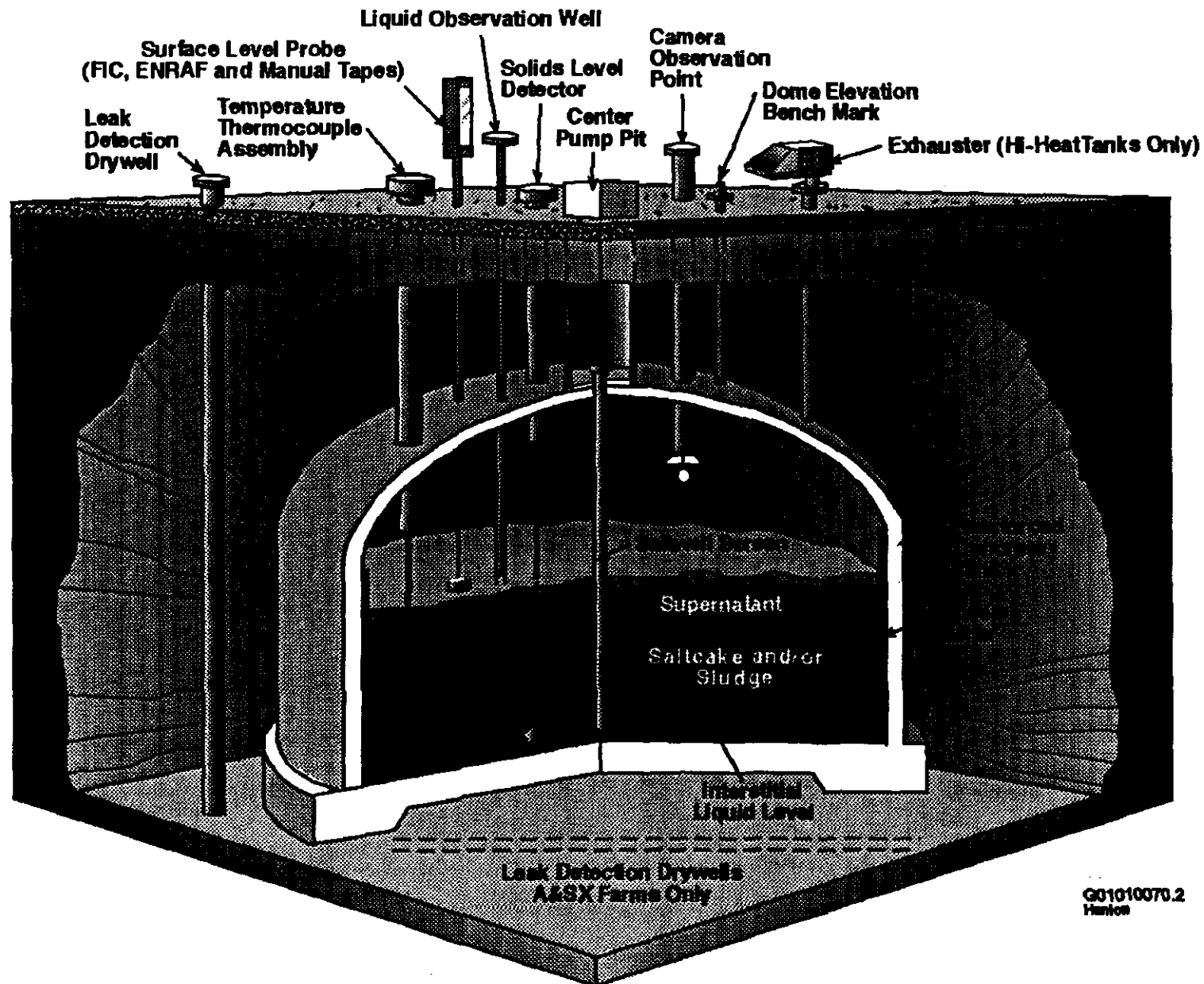


Figure I-3. Single-Shell Tank Instrumentation Configuration

**THE TANK FARM FACILITIES CHARTS (colored foldouts)
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